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Byzantine Art

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SECOND ARTICLE

THE first stage of Byzantine art, represented by such products of Asia Minor as the Sinope miniature, amounts to the Orientalization of Greek art; a nearly complete submergence of classic form in Eastern color. How the Greek element was saved from disappearing altogether, how the dignity which Greek art accorded the human form was finally retained in Byzantine art, and how the two elements of Oriental color and Greek form were integrated anew—is the subject of the present article. We shall find that three things were mainly instrumental in producing the curious change from the proto-Byzantine to the developed Byzantine style: viz., the Arab conquest, the iconoclastic controversy, and the early Christian school of Alexandria.

The Arab conquest came in the first half of the seventh century. A century earlier, under Justinian, the Eastern empire had reached its widest extent, so wide indeed that it nearly realized the dream of Justinian of uniting and reviving the old Roman empire as it was before the separation of East and West. Its dominions in the sixth century embraced a strip of southern Spain, north Africa, Egypt, Italy, the Balkan peninsula, Asia Minor, Syria, and Egypt.

Two centuries later, when the successors of Mohammed had finished their conquests, two-thirds of Justinian's realm was gone. The Eastern or Byzantine Empire in the eighth century had lost everything except the Balkan peninsula and Asia Minor, and it is worthy of note for later reference, that it took the Mohammedans less than twenty-five years to subdue and assimilate the provinces of Syria and Egypt. Syria had been the centre from which flowed those Eastern influences which had so completely devitalized the Hellenistic art of Asia Minor, and turned it into the coloristic style we know as proto-Byzantine. Syria had been the meeting-point of the Eastern caravans, and the distributing point for the textiles from Persia and the farther East, by which the new colorism had been passed on into Asia Minor; when Syria passed into hostile control, this influence was checked. The Byzantine Empire of the eighth century, moreover, was reduced to an area primarily Greek, and its style was forced to refresh itself at the traditional sources of Greek art. We find in this one reason for the later revival of Hellenism in Byzantine.

The second thing which brought about this revival was the secularizing of art through the medium of the quarrel of the Images, or the Iconoclastic controversy. This strange

dispute, partly religious and partly political, convulsed the empire for over a century, from 726, the date of the decree of the emperor Leo the Isaurian which forbade the worship of the images of sacred persons as represented in sculpture and painting, to the final removal of all restrictions upon image-worship by the Empress Theodora in 842. It is hard for us to realize the far-reaching effect which was exerted by differing conceptions of dogma in those days when dogma was made. In the case of the Iconoclastic controversy the difference of opinion was nothing less than the abyss separating the Oriental from the Greek philosophy.

We have already noted the contrast between the Oriental and the Greek point of view, in that the Greek was a materialist, recognizing no difference in essence between the ideal and the real, or the divine and human, while the Oriental, particularly in the Semitic countries, reached a very high degree of abstraction in his conception of God. It is in fact this abstract tendency of the Eastern mind when dealing with ideal concepts that makes him in his search for ideal beauty strive to eliminate the naturalism in Greek figures and ornamental design. That is why the Orientalizing of Greek art into the proto-Byzantine style meant as we have seen a change from real figures to unreal ones, and from natural ornament to geometrical pattern. So also when the Christian faith passed into the phase when it began to be formulated in definite dogma, the Greek and Oriental parted company on a very fundamental doctrine of the orthodox faith.

This was the doctrine of the dual nature of Christ. When the doctrine was first promulgated in the fourth century, and Christians throughout the Roman Empire were invited to believe that Christ was both Man and God, the Hellenistic mind had no difficulty with the apparent contradiction, accustomed as it was to clothe its gods with human form, but the Oriental populations of Syria and Egypt, and of Eastern Asia Minor, found themselves unable to conceive their God in any but a spiritual sense. Hence, a great part of these peoples were heretics from the start, adhering to one unorthodox creed after another, but always one that included in its tenets the monophysite belief that the nature of Christ was one, and that one divine. This undoubtedly had much to do with the ease with which the Mohammedans spread their doctrine of "One God, Allah" in Syria and Egypt, and pacified those provinces within

twenty-five years after their separation from Christendom. The simple Moslem monotheism appealed to the Oriental mind, wearied of the metaphysical subtleties by which the Greeks explained the dual personality of Christ.

The same impatience with Greek materialism underlay the efforts of the image-breakers to banish the carved and painted representations of Christ and the saints from the churches. The movement had its political and economic aspects as well, for the emperors viewed with concern the growing concentration of property in the hands of the monks, and, in attempting to undermine the cult of images, they were aiming as well at the monasteries that profited by the superstitious reverence of the people. They were seconded for the same reason by a fair proportion of the secular clergy, and the monks included both emperor and bishop in the invectives which they hurled at the iconoclasts. A curious echo of the fight appears in many of the monastic psalters, illustrated editions of psalms which were made for the use of Byzantine monasteries from the ninth century on, and one of these illustrations shows the iconoclasts painting out an image of the Saviour, the proceeding being superintended by an emperor and a bishop. A little black devil encourages the emperor in the horrid work. Another result of the controversy was the exportation of numerous sacred images of Christ and the Virgin to Italy in an effort to save them; their unheralded appearance here gave rise to various legends of their origin, and many an early Byzantine picture in Italy owes its presence there to the iconoclastic controversy, although the guide may tell you that it was brought by angels, or painted by St. Luke, or was miraculously ferried from Asia or Constantinople to the peninsula. But the important outcome of the iconoclastic controversy from our point of view is that during the period of its continuance—the last half of the eighth century and the first half of the ninth—the old proto-Byzantine Oriental art suffered a check because of the stoppage of production of religious art, or at least was confined to the monasteries where the rebellious monks continued to make their pictures in defiance of the law. When Byzantine art revived, the thread of tradition which connected it with its first phase was broken, and the new ateliers of Constantinople and Asia Minor were receptive to the Hellenistic style.

The old proto-Byzantine thus continues only as a monastic manner, and is chiefly represented in later Byzantine art by those monastic psalters which we have just mentioned. The earliest examples of this class of illustrated manuscripts that we now have date from the ninth century, but the tradition continues far into modern times; Byzantine art is still the religious style of Russia, and we find monastic psalters written and illustrated in Russian monasteries even as late as the eighteenth century, using also the same old subjects, and much the same style, as were in vogue in the ninth century. The scenes consist of allegorical or moral applications of the verses of Psalms to the acts of Christ or the monkish life. When a passage alludes, for example, to the striking of water from the Rock of Horeb by Moses, the Rock is made to mean Christ as the source of the water of Life, and a little figure of the Saviour is perched upon its summit. There is little to remind one of the Hellenistic in these vignettes; their tendency is rather to debase and misunderstand the classic forms. The style is still that of the proto-Byzantine period, and not essentially different from the miniatures of the manuscripts of the sixth century produced in Asia Minor like the fragment from Sinope. The figures are small and lack convincing movement, and color suppresses the forms to such an extent that all reproductions of the scenes in these psalters make the figures look like

silhouettes. Thus in the long run the monastic psalters represent the continuation of the proto-Byzantine style of Asia Minor, and are more Oriental than Greek.

Contrast with this a scene from what Ainaloff calls the "aristocratic" type of psalter, which began to be made about the same time as the monastic variety, but for the edification of court and aristocracy. Here there are depth and locality, the postures are classic, and the figures also have recovered the size, importance, and dignity of Hellenic art. We know that the Orient devitalized the monastic style. What agency kept alive the Hellenistic that it should enter so powerfully into Byzantine art at this late date?

In my own opinion, this was the school of Alexandria. Alexandria in Egypt was the chief stronghold in later classic times of the Hellenistic style, and its early Christian school, during the early Middle Ages, maintained the Hellenistic tradition, which, after the iconoclastic controversy, succeeded in re-Hellenizing the art of the whole Christian East.

By Hellenistic style we mean that free naturalism which we find in Greek works of the Roman period. It is the last phase of pure Greek art, before the Orient began to transform it into a flat colorism. It is the sort of thing we find, for instance, in the wall-paintings of Pompeii, and in such reliefs as the well-known peasant driving a cow to market. Fond of picturesque detail, with backgrounds of architecture of pseudo-landscape; free of movement, with a preference for boldly rounded forms and a three-quarters turn to the face and figure, it retains a Greek freshness and materialism in strange contrast to the spiritual abstractions of Christianity that it will be called upon presently to embody.

Its evolution under Christian influence can be traced in the early church art of Alexandria. An ivory pyxis of Berlin, for example, has lately been proved to be a product of the Alexandrian ateliers by Miss Alison Smith, who has demonstrated that the altar used in the sacrifice of Isaac is a form peculiar to Egypt, being the shape employed in the worship of Isis. The Hellenistic inspiration of the work is sufficiently indicated by the lively movement and freedom of posture which we see in the Christ and his apostles, as well as in the resemblance of the Abraham in the Sacrifice to the figure of Calchas in a fresco of Pompeii representing the Sacrifice of Iphigenia. We should probably date the Berlin pyx in the fifth century; the sixth-century style which succeeds it is illustrated by a famous throne of Bishop Maximianus (reproduced in the preceding article), of Alexandrian

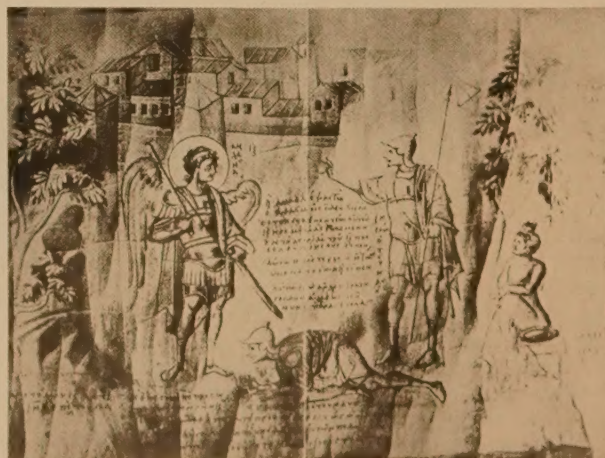


Fig. 1. Rome, Vatican Library. Miniature of the Joshua Roll. Joshua and the angel of the Lord.



Fig. 2. Paris, Bibliothèque Nationale. Miniatures of a Byzantine manuscript of the ninth century.

workmanship. The figures here have acquired a new solemnity that befits their Christian function, and are of ampler proportions than one finds in Asia Minor works of the same sixth century, as we may see by comparing them with the puppets of Herod's Feast. There is also a fulness and roundness to the forms that is absent in Asia Minor, and the impressionism that in the Asiatic works results in colored flat silhouettes produces here rather the illusion of shape. One notes, for instance, the clever semblance of the eye which is gotten by the rough cutting of a little block beneath the eyebrow.

The persistence of the Alexandrian style can be traced in the illustration of a number of manuscripts written in the period succeeding the Throne of Maximianus, such as the Joshua Roll of the Vatican Library (Fig. 1), which dates in the seventh or eighth century according to its latest editions. It is a parchment roll about thirty feet long, filled with scenes from the book of Joshua, to which a later scribe has added extracts from the book which explain the scenes. The episode shown in Fig. 1 is the appearance of the angel of the Lord to Joshua, who stands in astonishment at the celestial vision, and then prostrates himself at the feet of the angel. Around about these figures are the rocks and trees of a Pompeian landscape done in the brisk impressionism of contrasting lights and shades, the city of Jericho in the background represented in actuality, and again in Hellenistic fashion as the personification with a mural crown that sits on a pedestal behind the standing figure of Joshua. There was practically no color in the drawings as originally conceived; the broad shading is used for the sole purpose of bringing out the forms, and this and the impressionistic drawing are plain survivals of Hellenistic style.

This art was exiled by the Arab conquest of Egypt in the first half of the seventh century. The capture of Alexandria, in 651, must have broken up the ateliers of the city as well as its schools. The craftsmen that had been preserving the Greek tradition in such works as the Throne of Maximianus and the Berlin pyxis could not have failed to emigrate at the time of the Arab conquest, to some extent at least, and it is probably no mere coincidence that in the latter part of the seventh century and the beginning of the eighth we find at Rome occasional examples of fresco in pure Greek style which contrast in their superior impressionism and brisk drawing with the halting productions of the local school. Some of these artists must have gone to Constantinople too. It is certainly to some such fresh infusion of Hellenism that we can attribute the appearance in the ninth and tenth centuries at Constantinople, after the close of the iconoclastic controversy, of a style that is almost purely Hellenistic.

The best-known examples of this style are those "aristocratic" psalters which we were just now comparing with the "monastic" variety. They are illustrated with full-page inserts quite different from the little marginal vignettes of the monastic type, and quite pagan in feeling and tradition, as in a picture of "David the Harper," charming the beasts like Orpheus in the midst of a Pompeian landscape, with the mountain god of Bethlehem in the foreground and Echo peeping around the fountain in the rear. Besides these personifications which are reminiscent of classical antiquity, we find a feature which is absent in the monastic psalters, but is very characteristic of these Hellenistic works of art in the Byzantine period, viz., the embodiment in the human figure of an abstract idea, such as the Melody who sits beside the Psalmist. Throughout these manuscripts we find a freedom of posture, a breadth and dignity in the figures, which are big and fill the scene, contrasting markedly with



Fig. 3. Daphni, mosaic. Crucifixion, with Mary and John.



Fig. 4. Constantinople, Kahrie Djami, mosaic. Mary receiving the wool for the temple veil.

the Orientalized pictures we see in the school of Asia Minor (Sinope Gospel) of the sixth century, or the continuation thereof in the monastic psalters.

The Asiatic school could not fail to be influenced by this revival of Hellenism, especially when its productions were not so severely limited in scope and purpose as the monastic psalters, and were made to appeal to a less conservative taste. The shift of the Asiatic style toward the Alexandrian can first be seen in a famous ninth-century manuscript of the Bibliothèque Nationale at Paris, illuminated in Constantinople and containing the commentaries of St. Gregory of Nazianzus. The Raising of Lazarus and the Entry into Jerusalem (Fig. 2) are still in the tradition of the primitive school of Asia Minor, and from such early works as the Gospel of Sinope it retains the oblong illustration instead of the full-page picture. The figures too are flat and quiet as to pose, preserving curiously that tradition of the earlier Praxitelean and un-Hellenistic style which was peculiar to the works of Asia. But the new Hellenism has made the figures larger and more significant, and a sense of locality is evident in the more convincing city of Jerusalem.

Thus we see in this manuscript the beginning of that process which I have called the re-Hellenization of Byzantine art through the medium of the Alexandrian style. In the eleventh century the process is complete, and Byzantine art is finally integrated. In the mosaics of the monastery of Daphni, near Athens, the Asiatic and Alexandrian have combined into something new and very beautiful, which can properly be called the climax of Byzantine art (Fig. 3). Hellenistic is the nudity of the Christ of the Crucifixion, and the size and dignity of the Mary and John beside the cross. Oriental taste, however, dictated the broad color effects and the background of gold, and the quiet Praxitelean pose of the figures comes from the Asiatic tradition of early Byzantine art. In composition and design the rhythm of the East is combined with the proportion and symmetry of Greek art.

As we pass into the twelfth century this delicate mingling of Greek dignity and Oriental decorative beauty settles into formula, and particularly in scenes demanding action we find a more mechanical movement, as in the mosaics of St. Mark's at Venice of about 1100. The rhythmic symmetry of the eleventh century becomes a rigid one in the twelfth, and the form-revealing drapery of the earlier period flattens into planes, whose folds are rendered with gold hatching.

The woodenness of this drapery makes the heavy mantles assume the aspect of a beetle's wings, and this becomes the salient characteristic of twelfth-century drawing. The rigidity that thus is gradually freezing the Byzantine style is due of course to its didactic purpose; dedicated as it is to the rendering of spiritual truth, it had no interest in truth to nature. It is no part of the priest's business to preach the joy of living.

The Gothic revival in Italy and France seems to have created a stir in the bleak tradition of the Byzantine, in such works as this mosaic of Kahrie Djami at Constantinople. In Fig. 4 we see the episode, drawn from the apocryphal gospel of James, in which the High Priest singles out Mary from among the virgins as the one who shall spin the purple veil for the temple, and consigns to her the purple flock of wool. The deepening backgrounds of Italian painting may have inspired this artist to open up his space, and we also see that in addition to the usual radiating perspective of Byzantine tradition he has tried a bit of scientific foreshortening in the roof of the building to the right. The postures of the priests as well show a sudden energy, as if mechanical dolls were set in motion by an electric current. But, aside from such mechanical imitations of life, the Renaissance of the West left the Byzantine style unaffected, and it went on its hieratic way into the religious art of the modern Greek Church oblivious of the natural beauty which was revealed to the artists of the rest of Europe.

It had adopted in any case certain processes of technic which were ill suited to naturalism. The rigidity of its figures, and the geometric quality of its beautiful design, had early made mosaic its favorite medium, and later on the kindred art of cloisonné enamel. The Morgan collection in the Metropolitan Museum contains some fine examples of the latter technic as practised by the Byzantines, and practically monopolized by them. It consists of covering a metal plaque with a linear design, figured or otherwise, and then incising the contours, into which are then fitted little gold partitions forming tiny canals or cells into which the enamel of various colors is poured. The resulting drawing is all in gold, and the colors have the brilliance of enamel added to their natural beauty, so that the whole effect is very magnificent indeed. Mosaic, enamel, and the delicate process of manuscript illumination are the favorite technics of the Byzantine craftsman; his sense of beauty, barred by tradition and the didactic purpose of his art from the imitation



Fig. 5. Palermo, Cappella Palatina, mosaic. Christ entering Jerusalem.

of nature, takes refuge in color, and the elaboration of a design which in its balance of Greek proportion and Oriental rhythm was the pattern of all Europe until the rise of Gothic art.

It is by contrast with Gothic that we understand the Byzantine best. The difference between the two is summed up in the way each treated the saints; the holy men of the East are usually white-haired patriarchs, while even the patriarchs are youths in Gothic art. The Gothic was in truth an art of youth, and its salient characteristic is that it is always growing; the Byzantine was born old and could not change. It repeats the same compositions century after century; when Didron first explored the libraries of Mt. Athos he found a manual used by the painters of the monasteries there which dated from the eighteenth century and reduces to a formula the rendering of any scene that a monk might be called upon to paint. The description of the Entry into Jerusalem which is found in this text-book almost exactly fits the mosaic scene in the church of Monreale (Fig. 5), executed six centuries before: "Paint the walls of a city (the manual directs) and a mountain outside thereof. Christ is seated on an ass and blesses. Behind Him, the apostles, in front of Him a tree on the mountain. Children cut the branches of the tree and throw them on the ground. . . . Below, near the ass, are other children; some carry branches, others jostle each other, others throw branches beneath His feet, etc., etc."

What is it that gives this scene, so unoriginal, so unreal that the ass's feet do not even touch the ground, the power to move our admiration? It does not move our feelings; the appeal is wholly mental so far as the actual episode is concerned; what lyric quality there is in Byzantine art comes from the design and the color. The effect comes, I think, from the very unreality of these dignified figures. They are so portentous in height and rigidity that we lend

them significance in spite of ourselves, and this significance, being wholly unconnected with their physical existence (since one cannot imagine them alive) is finally realized as spiritual. They seem to be enacting some solemn moment in a liturgy, and every gesture is symbolic of dogma, like the movements of the priest in the mass. It is this power of spiritual expression that makes Byzantine art so impressive, through all its contradictions of nature, and indeed because of them. Add to this dominant theme the emotional accompaniment of color and rhythmic design, and one possesses the Byzantine effect *in toto*.

The comparison with Gothic art again suggests itself, and we can best sum up the impression gained by this brief survey by comparing again the two Madonnas with which it opened. The French Mary is very much a woman, though undoubtedly a noblewoman, an ideal of chivalry rather than of asceticism, and surrounded by the halo of romance rather than of piety. Her exaggerated pose, and that of her Child, and the smile on her face, have all the exuberant irresponsibility of youth. Some young layman made that statue, with no interference from any churchman, and he was not thinking about the dogma of the Incarnation when he did it.

Her Byzantine sister is flanked by elderly saints and is stiff and straight. There is none of the feminine mystery about her that makes the Golden Virgin so enigmatic. Her meaning is perfectly plain; the very rigidity of mother and child express the unchangeable dogma that they represent. The Incarnation of God is here presented, in true Greek fashion, to your mind, not your heart; you believe it or you don't, but if you don't the woman here represented has no further interest save as part of the decorative pattern. The Madonna of Amiens may be called an emotional reality; the Byzantine Virgin of St. Mark's is surely an intellectual abstraction.

Prizes for a Small Hospital Design

THREE cash prizes of \$500, \$300 and \$200 will be awarded and two honorable mentions made.

The purposes of this competition are (a) to stimulate the building of small hospitals that are efficiently arranged, suitable for smaller communities and are architecturally creditable; (b) to bring to the trustees of small hospitals floor plans that shall combine simplicity of design and good taste with a compact arrangement of the various departments of the hospital now regarded as essential to the efficient, scientific care and treatment of the sick.

Copies of the general programme may be obtained from the Modern Hospital Publishing Co., Inc., 22 East Ontario Street, Chicago.

Prizes for Designs on Time

BELIEVING that the art of clock designing has failed to keep pace with the general advance in decorative and commercial art, awards amounting to \$1,200 are being offered by the Cloister Clock Corporation, of Buffalo, N. Y., for the best designs of clock cases in three general classes. A distinguished jury has been selected to make the awards in the competition. It consists of Charles Dana Gibson; Richard F. Bach, Metropolitan Museum of Art; Albert M. Kohn, jeweller; C. Matlack Price, editor and art critic; and Russell F. Whitehead, secretary of the Architectural League.

The fact that the clock designs of the Willards and Eli Terry, who completed their work over a century ago, are still recognized as supreme in the field of clock design in America makes it apparent that clock designers have not developed their art on a plane worthy of the inspiration and impetus so early given. The donors of the prizes in the present competition believe that this has been due to lack of incentive rather than the exhaustion of the field or a lack of ability on the part of designers to produce new and finer conceptions. The purpose, in the competition, is to supply this incentive.

The awards include three first prizes of \$250 each, three second prizes of \$100 each, three third prizes of \$50 each, and nine honorable mentions. The prize-winning designs become the property of the Cloister Clock Corporation, which also reserves the right to purchase at a fair price any designs which do not win prizes. The competition closes October 23.

One set of prizes is offered for an upright mantel clock case of wood, greater in height than breadth, and another for a case of the same general proportions, in metal. The third set is offered for a mantel clock case of wood greater in breadth, at the base, than in height. The cases must have a minimum inside height of seven and a half inches, an inside breadth of four inches, and an inside depth of four inches.

While open to every one, the competition is expected to be of particular interest to artists, architects, designers, and draftsmen.



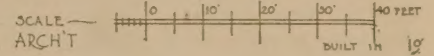
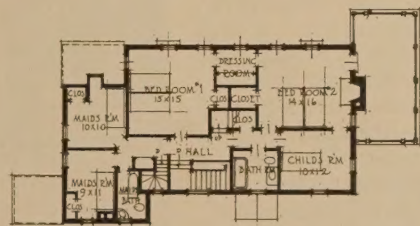
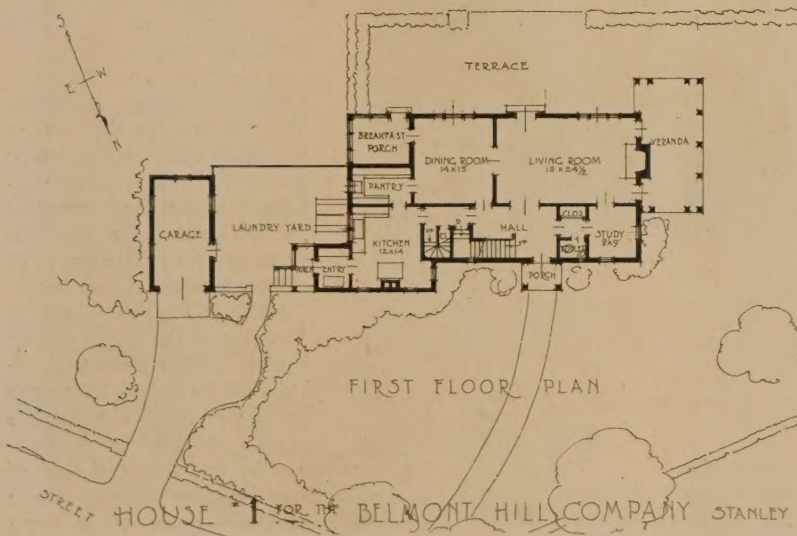
HOUSE FOR THE BELMONT HILL COMPANY, BELMONT HILL, MASS.

Stanley B. Parker, Architect.



VIEW FROM THE STREET

GARDEN SIDE



STREET HOUSE FOR THE BELMONT HILL COMPANY STANLEY D PARKER ARCHT

The Hardware Mutual Insurance Building, Stevens Point, Wis.

Childs & Smith, Architects



Detail showing one of the lighting fixtures flanking the entrance, also one of the flower-vases on the first-floor level. The spandrel section shows in the centre the insignia of the State of Illinois. In the Greek fret are shown the national eagle, the keys and padlock, which is the insignia of the Hardware Mutual Insurance Company, and the pelican, the insignia of insurance.

ground of extravagance offered for such an elaborate building ceases when its real cost is known.

The main reason why a building of this type could be erected at such a moderate figure is because its decorative portion, which has the same architectural expression as the Villa Madama or the Papa Julio in Italy, measures in square area only 4 per cent of the total square floor area of the entire building. The remaining 96 per cent is built as simply as the office factories of the national department buildings in Washington. Such contrasts accentuate decoration, even as some simple Spanish façades make fine backgrounds for ornate entrances.

The architects were apparently influenced in their design of the main entrance by the composition of the Morgan tablet in the Metropolitan Museum. The door jambs 2 feet 8 inches wide have not a single moulding, but are decorated with three niches on each side in which in high relief are sculptured personifications of hardware and insurance. The delicate tracery which ornaments the borders around the niches which contain these sculptured figures creates a lacework effect, the scale of which is in charming contrast with the simple boldness of the figures. The figures are the creation of Ulysses

CAN an imposing home insurance building be practical, at the same time monumental and not cost more than other average business structures? "We think that it can," said one of the members of Childs & Smith, alluding especially to the Hardware Mutual Insurance Building at Stevens Point, Wis. This building cost a year ago fifty-six cents a cubic foot. It includes every modern business convenience in its plan and equipment, and the best craftsmen in America contributed to its successful completion. Any possible criticism on the

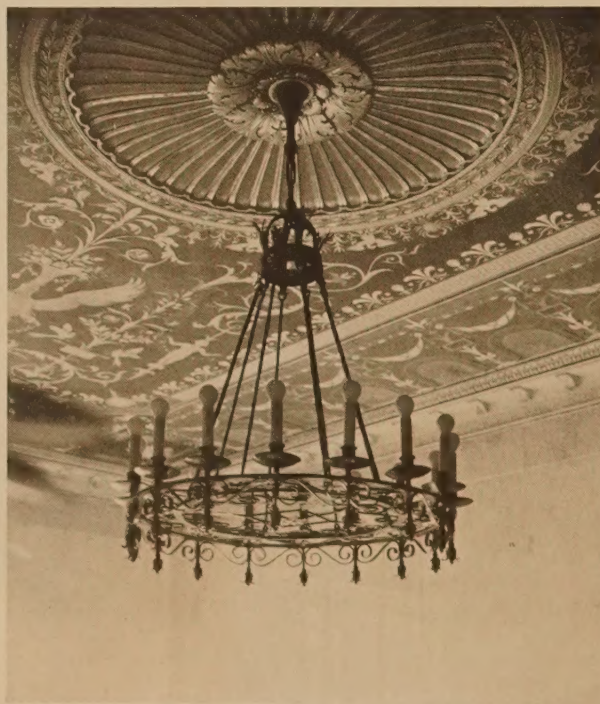
Ricci of New York. The stone carving has been beautifully executed. The jambs and lintel of this entrance form a beautiful framework for the wrought-iron grill entrance by Samuel Yellin, one of the best of his examples of Renaissance wrought-iron work.

This entrance door and the highly decorative entrance lobby shown in the plans give the monumental touch necessary to a building of this character. The entrance lobby has been called the "Employees' Room" because in the ceiling, the decoration of which was inspired by the Villa Madama ceiling, the various attributes of a successful employee are depicted by figures. The strength of color in this ceiling recalls the mural work of the Cunard Building in New York, of the Detroit Public Library, of the Morgan Library in New York, etc.

Symbolism has been used with great effect in this building, both on the exterior and interior. Every possible opportunity was seized to give this building a particularly individual touch which would make it interesting. The seals in the frieze on the exterior are those of the H. M. I.—Hardware Mutual Insurance—the seal of the United States, and the seal of Canada. In the spandrel sections on the exterior are shown the seals of the various States of the Union. The Greek fret of the base shows the national eagle, the pelican of the insurance, and the keys and padlock of the hardware industry. The tile floor shows the seasons of the year, the states of South America, the symbols of various industries, etc. Every portion of the equipment and decoration has some mark of the Hardware Mutual Insurance Company upon it. The old idea of useless decoration has been utterly done away with by these living symbols.

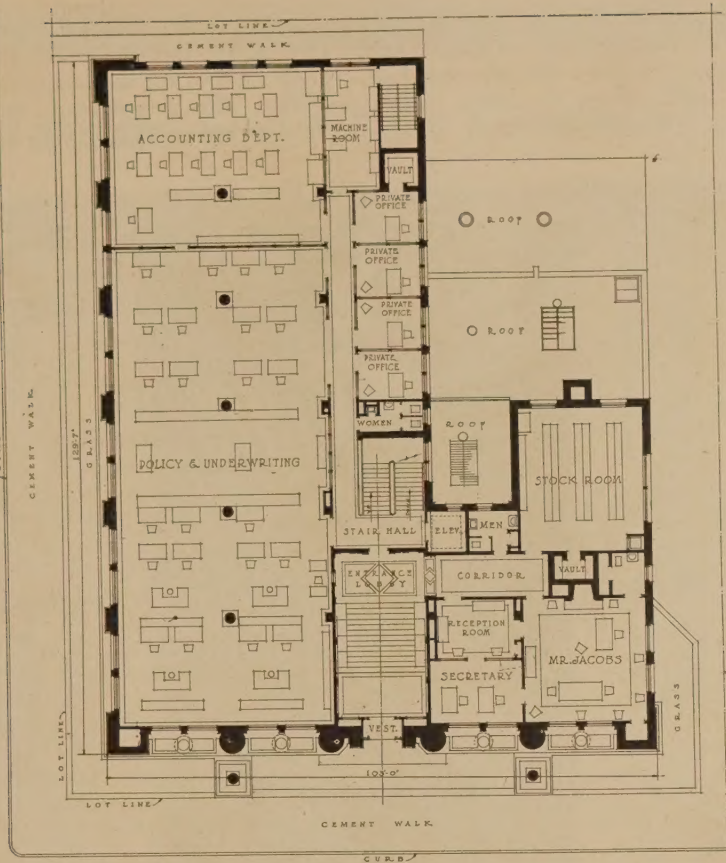
Color is one of the main features of this building. Were it not for the proven success of other brilliant color examples in America the architect might fear that this use of color in a business structure was extreme. But color in architecture is in "demand." The Cunard Building is the result of this "urge" in the East and the Hardware Mutual Insurance reinforces it in the Middle West.

The ceiling of the entrance lobby has a central field of brilliant vermillion, grayed with arabesques of ivory white antiqued. The ivory white decorations are made more brilliant with gold accents throughout this field. The cen-

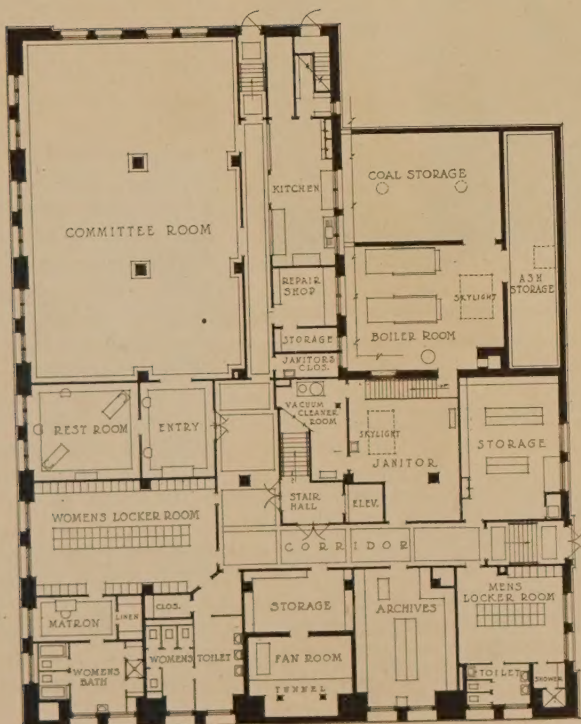


Wrought-iron lighting fixture in entrance lobby.

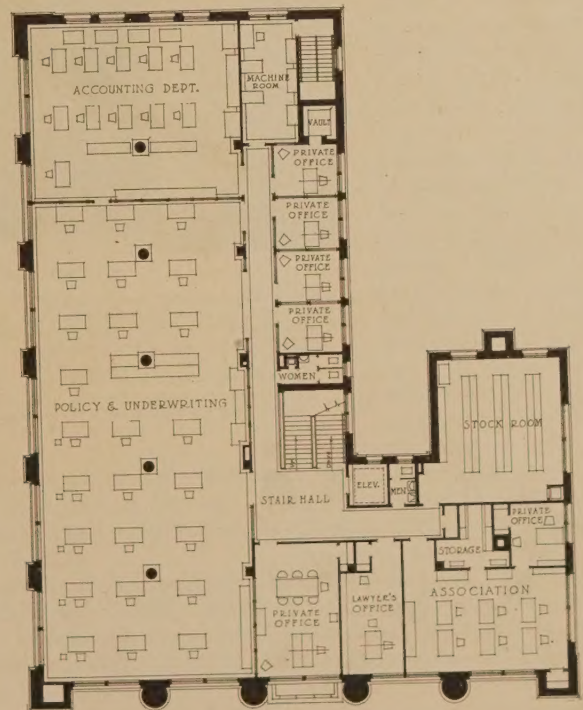
The ceiling of the entrance lobby has a central field of brilliant vermillion, grayed with arabesques of ivory white antiqued. The ivory white decorations are made more brilliant with gold accents throughout this field. The cen-



MAIN FLOOR (FIRST).



BASEMENT FLOOR.



TYPICAL SECOND AND THIRD FLOOR.

PLANS, THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.

Childs & Smith, Architects.

tral portion of the ceiling has the inverted shell motive, similar to the semi-dome of the Villa Madama. This inverted shell is in the deep peacock blue, with a centre acanthus leaf rosette of light green and gold. From the centre of this acanthus leaf is suspended a wrought-iron fixture, one of Yellin's interesting types. The border around the central shell of the ceiling has a general color of deep navy blue with decorations of gold, green, and red. The corner motives of the ceiling which break into this border are of black, vermilion red, gold, and ivory white. The beautiful warm green of the Botticino marble walls contrasts nicely with the brilliancy of this ceiling.

The secretary's room is rather startling in its color effect. The ceiling is composed of large stars, approximately four feet across. The legs of the stars are of a brilliant vermilion red, the leaves in brilliant red, surrounding an acanthus leaf of gold. The centre of the star is of a deep navy blue, surrounded by gold. The background for the stars is of a warm ochre with an acanthus rosette of gold, which gives the whole ceiling a rather warm ochre general effect, accentuated by the brilliant reds and blues of the stars. The border around this field of stars is of a deep navy blue and gold. The other color effects of the room are further enriched by the beautiful gray tile colors which Mr. Mercer has so well arranged. The general effect of this tile border is of a Maltese white with accents of deep greens, blues, and red-grays.

The stained glass of the reception-room adds still another color note to the general scheme. This is one of the best examples of "commercial" stained-glass windows in the country. It leaves an effect extremely decorative and quieting.

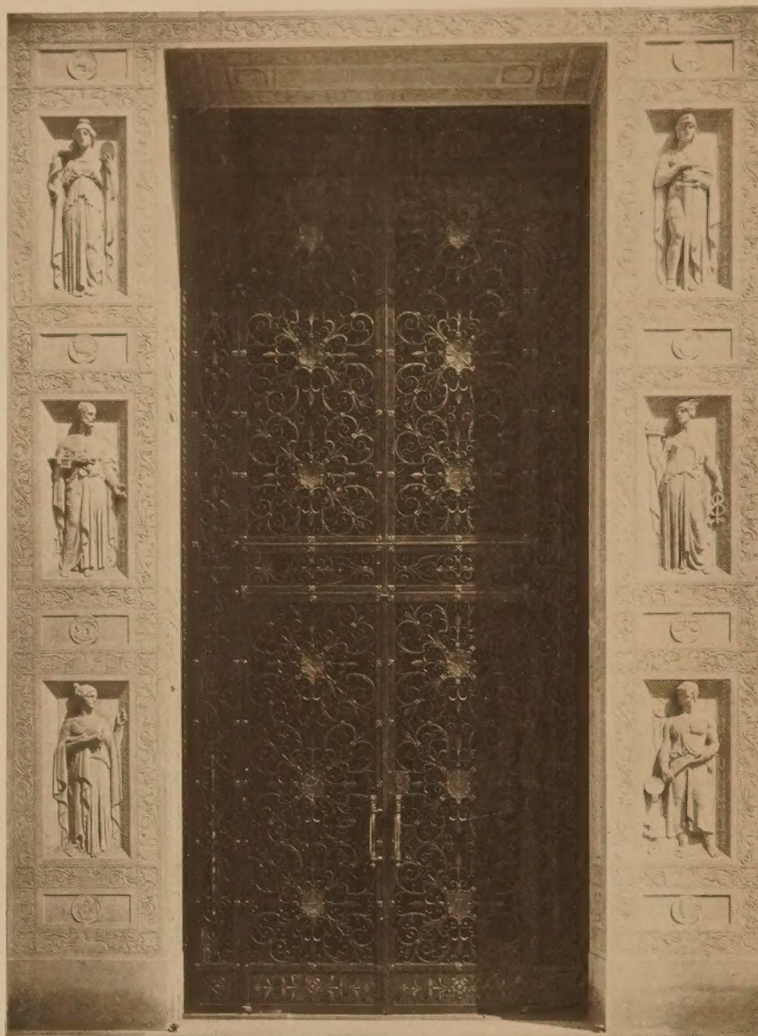
Color was expressed in the furniture wherever possible, such as the introduction of a Gros Point tapestry in the guest chair of the secretary's room and in the covers of the tables. The wrought-iron work brought out this color by introducing brass accents wherever possible.

There is a great breadth about this building, an intentional avoidance of anything small, which is reflected not only in its architecture but in the policy of the officials of the company. The exterior is very simple—of the same type as the Lincoln Memorial in Washington—its entrance and hallways are large and ample, its working units are purposely large and joined together with offices only separated from these large units in such a way that the officials governing them will not be disturbed by the noise.

The "open" policy is particularly evident in the basement, which is given up to the use of the employees—a large community room served by a kitchen fully equipped, if necessary, for regular use; a ladies' restroom, furnished with unusual taste in a French gray general tone with Medici reproductions on the walls. The women employees are provided with large locker rooms, lavatories, etc., and in addition have a separate bath department with showers, baths, hair-dryer,

and presided over by a matron. Likewise the men have their locker room, showers, and lavatories.

The modern demand for good craftsmanship has been met fully. Under the influence of the highly skilled craftsmen who directed the work every one concerned on the building took the greatest interest. There was an intimate and sympathetic co-operation, a feeling of pride in a fine achievement, in which all participated from architect to laborer.



DETAIL OF MAIN ENTRANCE.

The models of the door, commencing with the lower left, then going to the lower right, the middle left to the middle right, the upper left to the upper right, are as follows:

(Lower left.) The typification of the insurance company presenting the protection of the scroll of insurance to the labor of the hardware industry.

(Middle left.) The worker of the hardware industries presenting the results of his labor to commerce and industry on the right hand.

(Upper left.) Prudence and wisdom, the basis of insurance, standing as the attributes of the company and on the right the typification of the guardian of the financial interests of the hardware group.



Editorial and Other Comment

American Architecture

AMERICAN architecture has been receiving considerably more than its usual share of comment in the English journals. In the *London Architectural Review* of recent date there was an admirable and well-balanced article by H. M. Fletcher on the subject, brought forth by the exhibition of American work last autumn at the Royal Institute of British Architects and by the address made by Mr. Goodhue at that time.

"What has America to teach us? First of all, because it is the lesson we most need—lucidity, the excision of the superfluous. Many of these buildings are reduced to the bare bones of wall, doors, windows, and roof, and in most the proportion of mouldings and features to the square foot of wall-space is absurdly small, judged by our standard. But how clear and emphatic is the statement, and how much the rare features gain in value by contrast with the surrounding spaces! It is no easy matter to attain such economy without crudity and ungracefulness."

We cannot resist quoting his fine description of the Washington Monument. So many of our people look upon it with the passing casualness of the passenger on a sight-seeing bus, and only the few stop long enough or take the time to study its beauty in the early morning or at twilight. It is something that loses its significance in a crowd of hurried tourists; it needs the feeling of intimacy that comes only from an uninterrupted and silent contemplation—

"Thou, silent form, doth tease us out of thought
As doth eternity."

We do not remember reading a better or more expressive description of the monument than this by Mr. Fletcher in the article referred to above:

"This is a simple, featureless obelisk, which is yet perhaps the sublimest monument in the world, but unappreciated and unappreciable by those who have not seen it, for no drawing or photograph can convey its grandeur. It makes its effect by sheer size, being 55 feet square at the base, 35 feet square at the top of the shaft, and 550 feet high to the point. At first sight the scale is hard to realize, for there is no feature to judge by and no building near enough for comparison. You must live with it for a day or two, and note how the morning mists from the river will veil 150 feet or so at the base, while the apex shoots up sharp and definite into a clearer atmosphere, or how 100 feet at the top will glow in the sunset after the base and the surrounding trees have settled into darkness, or how at any hour the whole structure will change from ethereal blue to golden pink as you travel round from the shady to the sunny side. So by degrees, but surely, you come to feel the might of this austere masterpiece."

For a Wider Appreciation of Architecture

WE have been reading also in the *London Mercury*, a magazine devoted to letters and the arts, about the first quarterly dinner of the Architecture Club. The club has

for its purpose the awakening of the public at large to a wider appreciation and better understanding of the familiar architecture of our day.

We dare say that none of the arts is of less interest to the average man in the street, and none less understood. Here and there, of course, the big show building attracts attention by sheer power of mass and height; but how many of the thousands who yearly make a pilgrimage to the Woolworth Building, to look up at its tower against the skies or to count its dizzy stories, ever stop to see and *appreciate* the wonderful beauty of its details, understand why it is called a Gothic Temple of Business? This is only one example that is a perennial reproach to our general lack of intelligent interest in our architecture. What a fine text-book on the history of architecture is presented by Fifth Avenue from the Washington Arch to the Carnegie mansion. Here the observer may see manifested in various good and bad examples the olden styles commingled with the purely modern commercial building built for "trade," with little thought for architecture beyond the elemental principles of space and light.

Colonial, Italian and French Renaissance, Gothic may be studied in some notably fine examples, and if one cares to go in for details there are enough to occupy and repay days of careful study.

All this is carrying coals to Newcastle to most of our readers, we'll admit, but we refer to these things to point a moral—that it is our own fault if architecture is not taken more seriously by the lay public. Would it not be a good idea to have an Architecture Club along the following lines in this country.

"The Architecture Club grew out of certain private meetings held last winter by a number of architects (mostly of what is called the younger generation), journalists, and men of letters. During these conversations there emerged a general belief that a good deal of admirable architectural work had been done in recent years; but it was also agreed that the good work might be far commoner than it is if full use were made of the best architectural brains of the country. It was felt that the public, even the cultivated public, was very much out of touch with contemporary architecture; that intelligent criticism of architecture was scarcely ever to be found in the non-technical press, and that there was generally a lack of contact between the most enthusiastic architects and those critics and workers in other arts most capable of giving them stimulus and receiving stimulus from them. In the end it was decided to form a club to promote public interest in architecture, particularly modern architecture, and to foment intelligent criticism of the art.

"The club is to consist of three hundred members, of which one-third are to be architects and the rest writers and other persons interested in architecture. This admixture is also visible on the executive committee, which includes architects such as Mr. Gilbert Scott, R.A., and Mr. Ralph Knott (the designer of the new County Hall), and several laymen—amongst them are Mr. Clutton-Brock and Sir Lawrence Weaver. It will be interesting to follow the steps

which are taken to promote the interests of the club. What nobody could dispute is that they stand in considerable need of promotion. Nobody can compel us to hang daubs in our drawing-rooms, but every day some beautiful rural landscape or village street or some fine urban sight is defaced by an architectural daub which will afflict us and our posterity for generations. Everybody complains of this, but only active and co-operative endeavor will do anything to improve the situation."

For Coming Numbers

WE are glad to say that we have arranged for a new series of articles by Mr. DeWitt Clinton Pond that will be addressed to and of special interest to the younger men of the profession, and a new series by Mr. H. Vandervoort Walsh of timely and practical interest to all our readers.

A little later we hope to announce something of particular interest to students and the young men who are beginning their careers in the various offices.

The Elks' National Memorial Headquarters

THE competition for this monumental building has been decided, the award going to Mr. Egerton Swartwout for his characteristically finely balanced and dignified design. All of the designs submitted had distinction, but we think the decision of the jury of award will be generally approved, and congratulate both the Elks and Mr. Swartwout.

Our Frontispiece

WE are much indebted to the artist, George Wharton Edwards, for the privilege of reproducing as a frontispiece for this number his beautiful drawing of St. Paul's. He has recently made a most distinguished series of London views, of which this is one. Mr. Edwards is too well known, both by his books and his art, to our readers to need an extensive introduction. Honors have come to him in rapid succession. Awarded medal Order of King Albert of Belgium, conferred by the King, 1920; gold palms of l'Académie Française, for art, and made Officer of Public Instruction, France, 1921.

Awards by the Society of Beaux-Arts Architects

THE committee announces the results of the final competition for the Fifteenth Paris Prize of the Society of Beaux-Arts Architects as follows:

Subject: A city hall.

Jury of Awards: F. L. Ackerman, L. Ayres, R. P. Bel-
lows, P. P. Cret, J. M. Howells, J. H. Hunt, J. G.
Rogers, H. R. Sedgwick, and H. O. Milliken, chairman.

Awards: Prize and First Medal: Roger Bailey. *Patrons:* Professor E. V. Meeks and Mr. O. Faelton,
Bronxville, N. Y.

Placed Second and First Medal: E. W. Burkhardt, Col-
umbia University, New York City. *Patrons:*
Messrs. M. Prevot and H. W. Corbett.

Placed Third and Second Medal: L. Fentnor. *Patron:*
Mr. F. C. Hiron, New York City.

Placed Fourth and Second Medal: J. G. Schuhmann,
Jr., Columbia University, New York City. *Pat-*
rons: Messrs. M. Prevot, H. W. Corbett, and
J. V. Van Pelt.

Placed Fifth and Second Medal: E. L. Babitsky, John
Huntington Polytechnic Institute, Cleveland, Ohio.
Patron: Mr. J. Wynkoop, New York City.

WHAT THE CITY HALL OF TO-DAY SHOULD BE

A city hall is the chief edifice of a city and should unite perfectly the necessary and the beautiful. It should have sufficient room to house the administration spaci-ously, in a manner fitting to a great municipality, and architecturally to give a dignified expression of its purpose and of its plan.

In former times such a building dominated its city by size, height, or the richness of its material and decoration. To-day office-buildings or hotels may easily dwarf it and other means than mere height and size must be used to give it distinction. The site and approaches are of great importance.

In modern cities the business administration has grown to very great proportions; new departments have been created and the older ones have enlarged to meet the more complex needs of our civilization. Because of their interdependence it is preferable to keep these offices under one roof.

With the broadening of our international relationships another function of the government has developed in the last few years, to such an extent as to suggest an interesting treatment of the city hall which has not previously been envisaged, and which gives a particular character to this programme. The mayor, on behalf of the citizens, may frequently be called on to receive delegations, or the most eminent statesmen and warriors, from the great foreign nations, and occasionally to bestow the freedom of the city. This should be done impressively, in keeping with the dignity of a great metropolis, a great centre of art and commerce, one of the most important in the country. It seems preferable to give to this function a separate building, distinct from the administration, although in connection with it.

The group will be erected on a lot 400 by 400, facing a public square suitably treated for the great crowds which will gather in it at times. This public square will also be 400 by 400. The reception building will face this park and also be on the axis of a large transversal avenue. The arrangement of the other avenues reaching the square is left to the liberty of the competitors.

Mr. D. Everett Waid, president of the State Board for the Registration of Architects, advises us that *New York Architects Must Re-Register*. All architects practising in New York State will be subject to fine if they have not made application for re-registration. Application blanks can be secured by writing to the State Board of Examiners and Registration of Architects, Education Building, Albany, N. Y.

Professor Raymond J. Richardson has been appointed assistant professor in the department of architecture at Carnegie Institute of Technology, Pittsburgh. His duties begin with the fall semester of 1922. Mr. Richardson is a native Pennsylvanian and a graduate of the University of Pennsylvania, receiving his B.S. degree in architecture in 1914 and his M.S. degree in 1915. The following year he was with J. E. R. Carpenter, architect, of New York City, and for another year was with McKim, Mead & White, architects, also of New York City. He then entered the United States navy and saw about eighteen months of service as ensign with the Camouflage Division. After the war Mr. Richardson was associated for two years with Edward Z. Scholl, architect, of Reading, Pa., and was then awarded the Henry Gillette Woodman Travelling Fellowship at the University of Pennsylvania. Since May, 1921, until July, 1922, he was abroad studying as holder of the fellowship.



THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.

Childs & Smith, Architects.



ENTRANCE LOBBY SHOWING STAIRWAY LEADING TO THE EXECUTIVE OFFICES AND TO THE FIRST-FLOOR UNDERWRITING AND ACCOUNTING ROOMS.

THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.
Childs & Smith, Architects.



TOP OF STAIRWAY IN ENTRANCE LOBBY.



CORRIDOR LEADING TO EXECUTIVE OFFICES FROM
MAIN ENTRANCE LOBBY.

Childs & Smith, Architects.

THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.



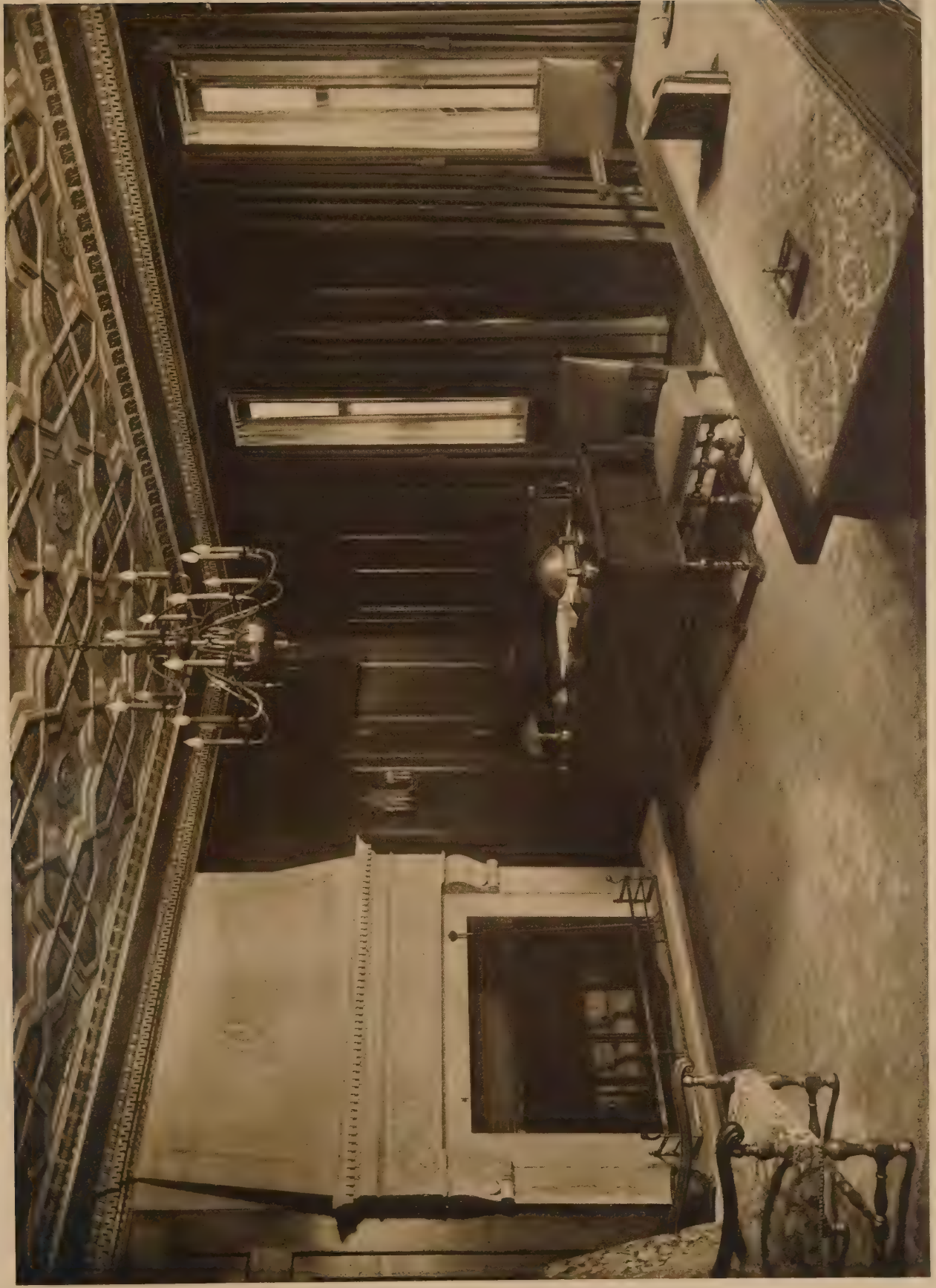
WORKING OFFICES.



RECEPTION-ROOM, ENTRANCE TO PRIVATE OFFICE.

Childs & Smith, Architects.

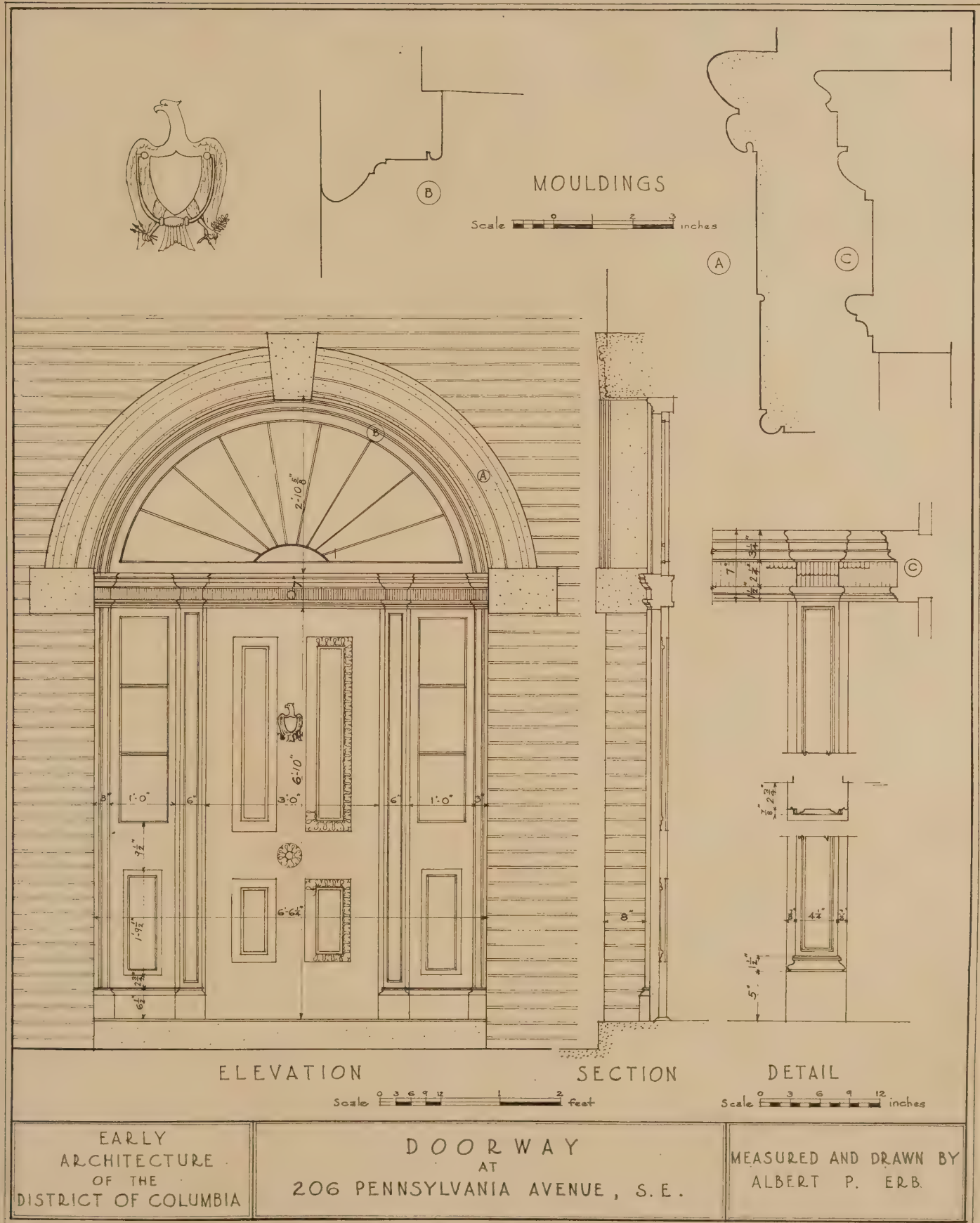
THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.

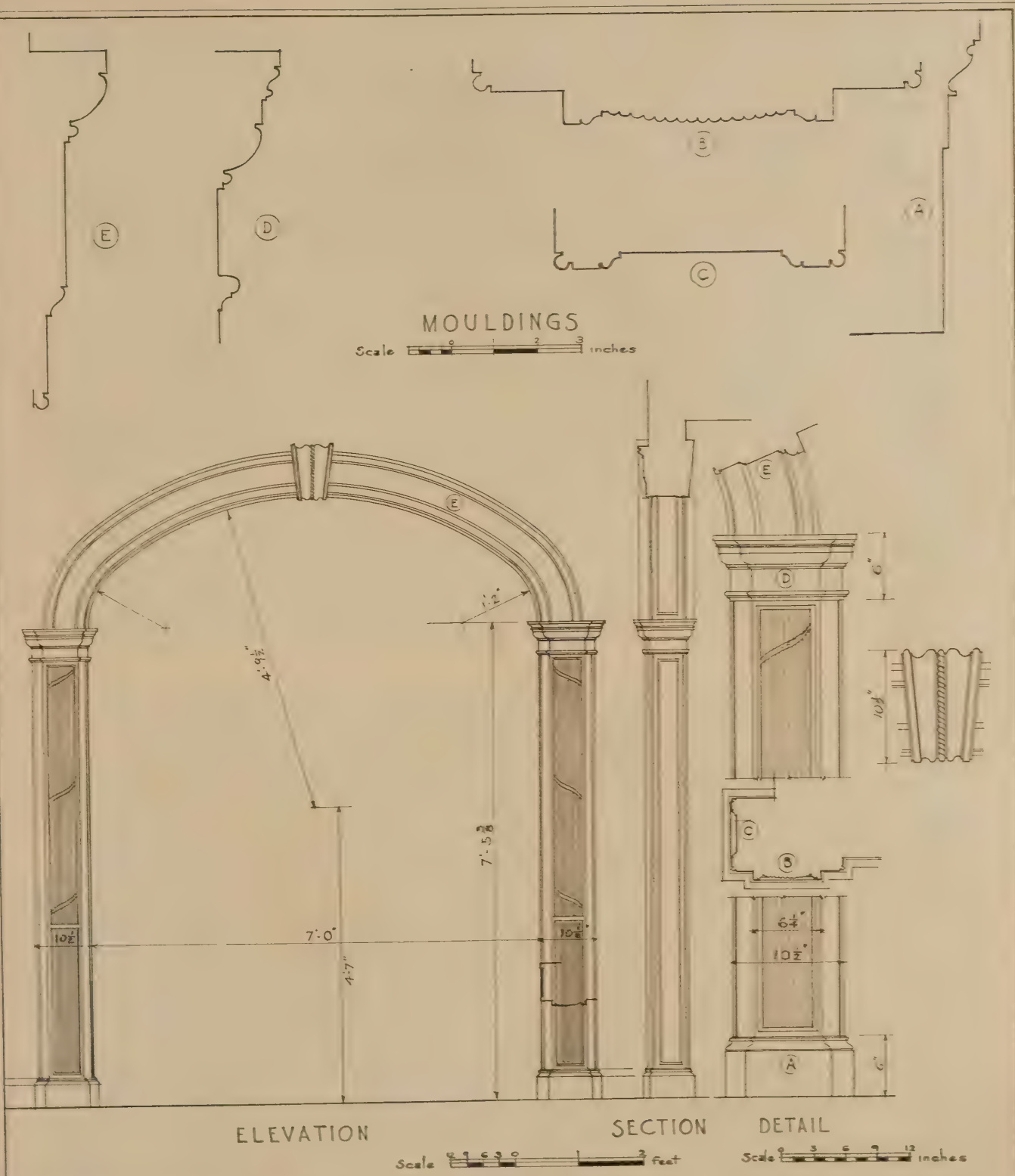


PRIVATE OFFICE, MR. P. J. JACOBS.

THE HARDWARE MUTUAL INSURANCE BUILDING, STEVENS POINT, WIS.

Childs & Smith, Architects.





EARLY ARCHITECTURE OF THE DISTRICT OF COLUMBIA	INTERIOR ARCHWAY IN HOUSE AT 206 PENNSYLVANIA AVENUE, S.E.	MEASURED AND DRAWN BY ALBERT P. ERB
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ENTRANCE DETAIL.



DETAIL, CORNER PAVILION.
SOUTHERN PACIFIC OFFICE-BUILDING, SAN FRANCISCO, CAL.

Bliss & Faville, Architects



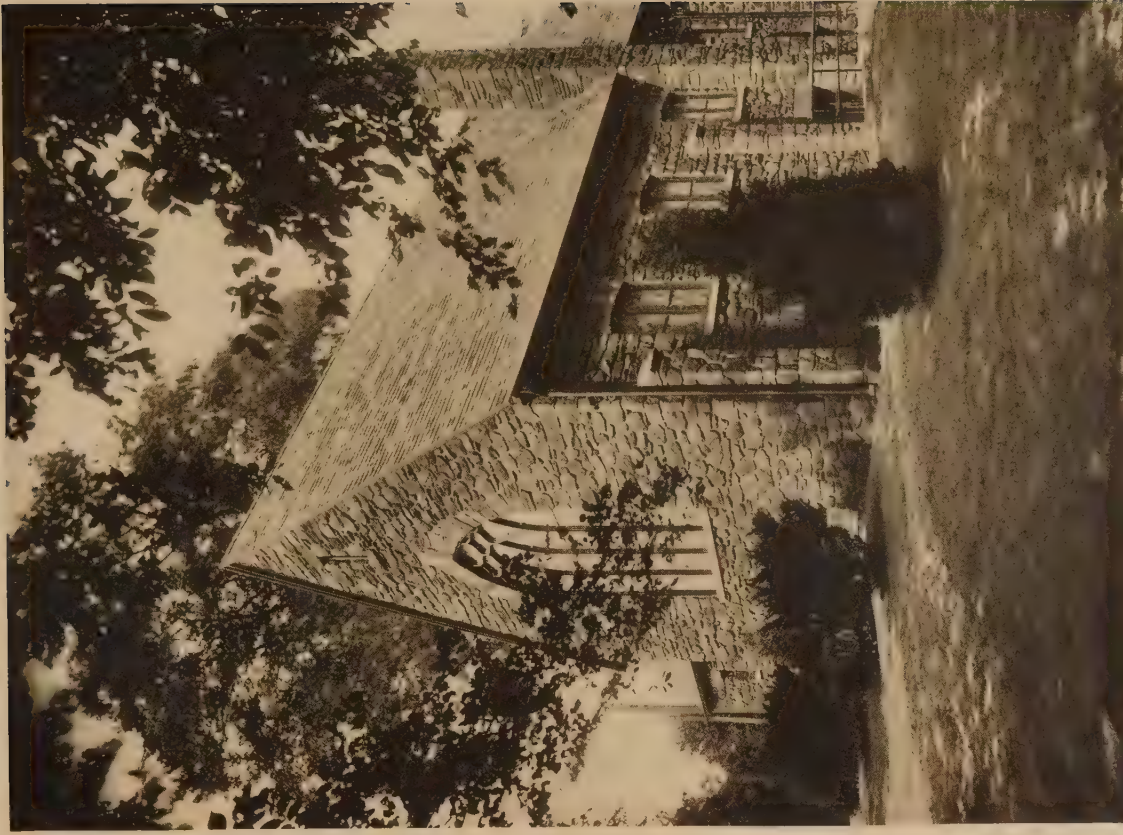
THE UNION CHURCH OF POCAANTICO HILLS, N. Y.

L. W. Eisinger, Architect.

OCTOBER, 1922.



DETAIL OF TOWER.

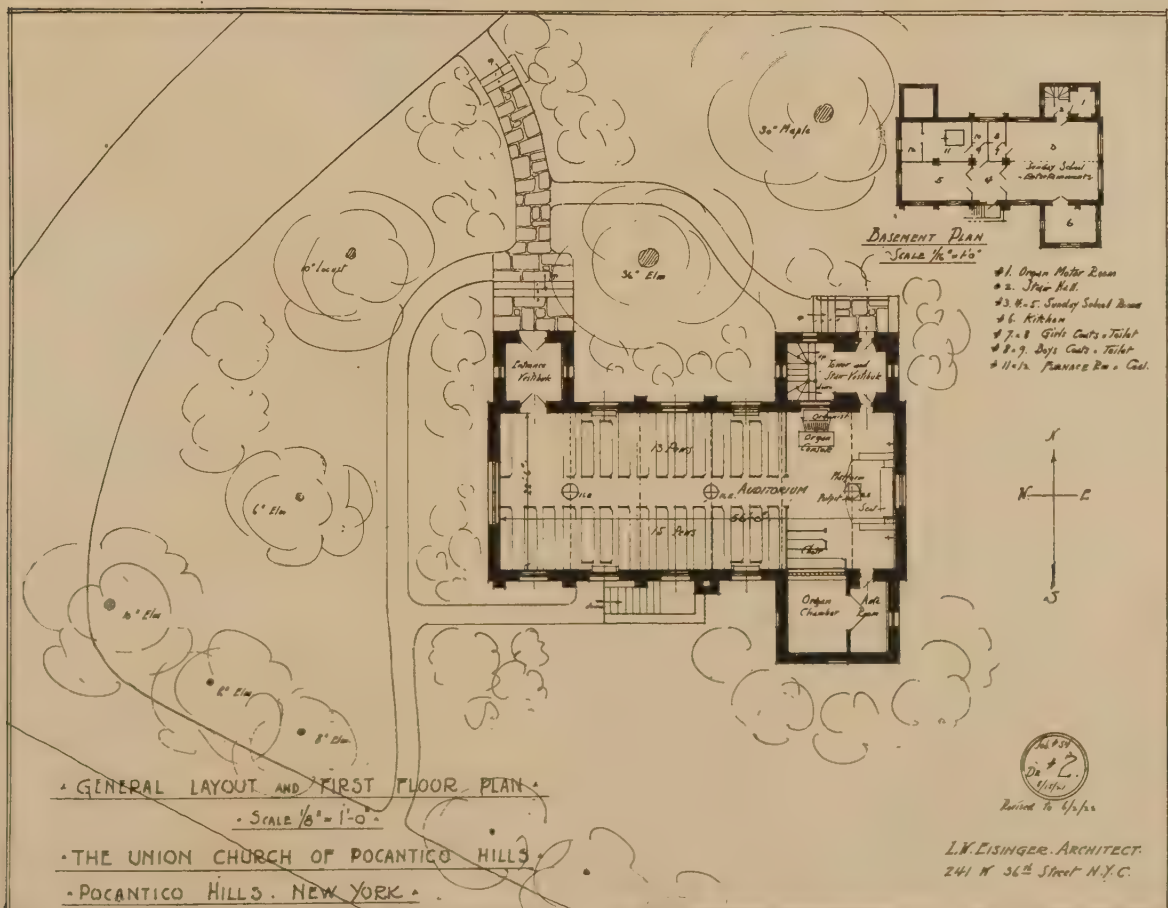


DETAIL.
THE UNION CHURCH OF POCANTICO HILLS, N. Y.

L. W. Eisinger, Architect.



AUDITORIUM.





STUDIO HOME, KENNETH B. WORTHEN, ST. PAUL, MINN.

Kenneth B. Worthen, Architect.



INTERIOR.



DETAIL OF ENTRANCE.

Kenneth B. Worthen, Architect.

STUDIO HOME, KENNETH B. WORTHEN, ST. PAUL, MINN.



RESIDENCE, CARL ESPY, SAVANNAH, GA.

HENRIK WALLIN AND E. LYNN DRUMMOND, ASSOCIATE ARCHITECTS, SAVANNAH, GA.



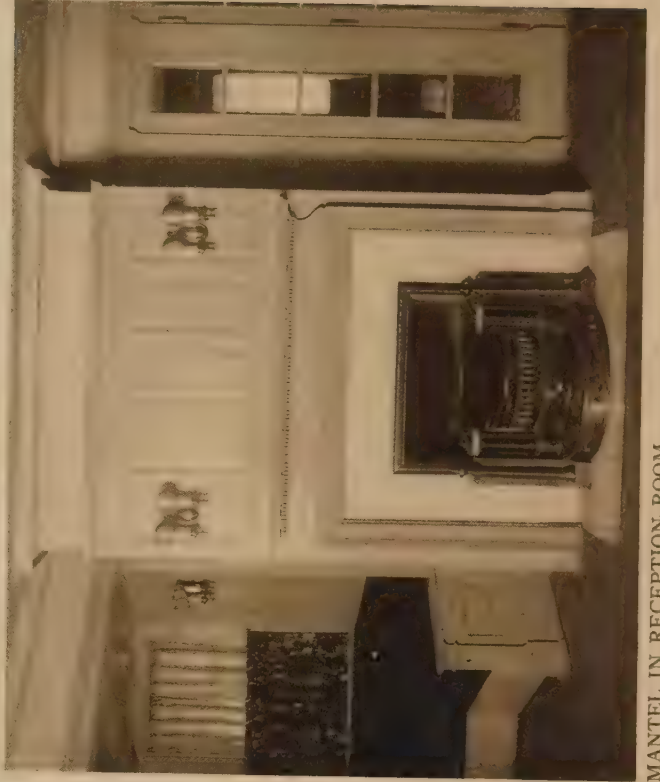
SOUTHERN VIEW, SHOWING GARDEN WALL.



VIEW OF GARDEN AND LIVING-PORCH.



FIREPLACE AND FOUNTAIN IN LOGGIA.



MANTEL IN RECEPTION-ROOM.

RESIDENCE, CARL ESPY, SAVANNAH, GA.
 Henrik Wallin and E. I. van Dusen, Architects.

“La Décoration Clarie”*

A Phase of French Mural Painting from 1663 to 1788, and Some of Its Exponents

By Henry Coleman May

THE early years of the nineteenth century marked a decline, resulting shortly in a practically complete disappearance, of mural painting as applied to domestic interior architecture. Vestiges of a former fashion still persisted, it is true, but in so debased a form that it is impossible to consider the stencilled walls and ceilings of the Victorian era as continuations of what had once been a brilliant and flourishing art. In the twenties and thirties we still find faint echoes of Angelica Kauffman's innocuous decorations, and characterless reminiscences of frescoes designed by the Brothers Adam, while in France there lingered vanishing echoes of Percier and Fontaine's ultraclassical ornamentation.

All this is indeed a far cry from the sumptuously painted rooms of Dutch and Italian seventeenth and eighteenth century houses; from the spirited compositions that enlivened the four walls of English and French contemporary salons. After 1830 overdoors and mirror-pieces, radiant with exuberant flowers and fanciful birds, panels showing scenes on land and sea, of known and unknown countries, were replaced by plain spaces spotted for the most part with meaningless framed pictures or covered with wall-papers of depressing design. As time went on, stodgy damasks, repeating on their respectable surfaces motives redolent of the artistic sensibilities of Manchester and Birmingham, or describing in Lyons silks the indigestible taste of the “*époque Louis-Philippe*,” were spread from wainscot to cornice, forming backgrounds for the massive gilding surrounding, perhaps, some unexpectedly charming Winterhalter.

The delicate Neo-Pompeian motifs of a Dugourc, of a Rousseau de la Rottière, even the affected classicism of the Napoleonic era, were despised, and the magical walls painted by a Fragonard or an Hubert Robert were relegated to something resembling oblivion by the arbiters of a period fantastic for its phenomenal lack of taste.

To-day there would seem to be a reawakened interest in mural decoration. A certain number of modern rooms

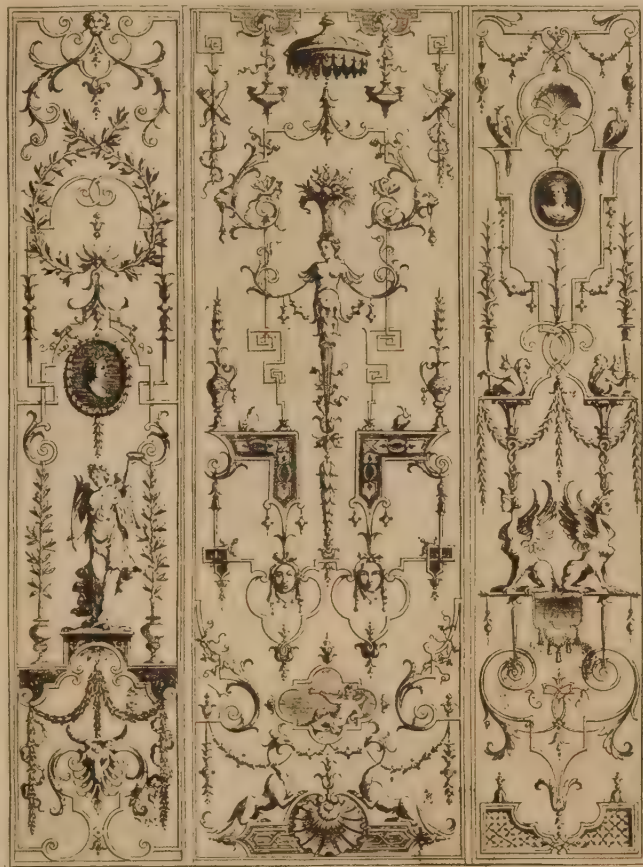
* I have retained the French appellation because its exact sense is only translatable in English by a sentence, instead of by a title.

have been very successfully frescoed, not to mention the innumerable others from which silks and papers have been discarded in order to return to the panel paintings of an earlier age. In houses of a more modest description papers bearing continuous scenes, dating for the most part from the early nineteenth century, have been satisfactorily re-

vived. Many of these latter, copied from the classic documents of David, or from the Oriental or Romantic imaginings of somewhat later artists, make most delightful backgrounds, and are, after all, direct if humble descendants of their richer and nobler prototypes.

There is something extraordinarily satisfying about a painted room. One has a feeling of completeness which can never exist in an apartment hung with framed pictures of varying sizes, no matter how marvellous these latter may be in themselves. Since we are on this subject, it may be as well to remark the fact of how often people seem to forget that all framed pictures should be hung coherently in regard to the decoration of a room, the features of which ought, primarily, to create a feeling of continuity. Framed paintings should be considered as one might a window, out of which one gains a glimpse of a stranger and more beautiful world, or the sudden vision

of a swift and thrilling scene. This was well understood in eighteenth-century England and France, where their masterpieces in portraiture were not considered too important to play a part in the general decorative scheme of a room, but rather to be enhanced by their harmonious framing. One of the best examples of this is the celebrated Double Cube Room at Wilton, where the sumptuous Van Dykes are deliberately incorporated in the general composition of the walls. The great difficulty, however, with much modern art is that it is apt to disregard all laws of composition. One sees that the picture begins inside of the frame, but one feels that most of it continues far outside of these limits. An unrelated episode is practically impossible of proper placing within any interior, but had better be left in a garden or hung on the walls of a veranda! The passion



I. Bérain. Engraved design for three panels (1667).

for great art, the recognition of a supreme creation, should not blind one to the exigencies of good taste or cause one to lose one's sense of measure. One is so often surprised to discover appreciation unaccompanied by taste.

It would, of course, be absurd to pretend that the greatest pictorial art does not exist separately, and within frames, but many of the brushes which touched the large surfaces of entire rooms were impelled by the hands of masters.

The early Italians bear witness to this. In their time the "tableau de chevalet" had not been invented; their walls became pictures, and it was only much later that rooms were decorated with conventionalized painting, marking a step forward in domestic ornament, and one which did not correspond exactly to the pictured room of an earlier epoch or the sumptuous tapestries of mediæval and ante-Renaissance Europe. In the fifteenth and sixteenth centuries we find numerous examples of painted panels. In the latter part of the fifteen hundreds small panels profusely decorated with arabesques and other conventionalized designs were extremely popular. During the era of



II. Bérain. Design for panel. Pen drawing touched with sepia (Bibliothèque Nationale Collection, Paris (1663).

Louis XIV, Bérain brought these motives to a high point of perfection, infusing into them a new and more distinctive character. He was closely followed by Gillot, whose fancy waned before the imagery which flowed from the brushes of Pillement and of Christophe Huet. As time progressed so did this very special and delightful form of art, until we find its apotheosis in the celebrated Fragonard Room, at present the property of Mrs. Frick. The panels painted for Bagatelle by Hubert Robert, now forming a part of the dispersed Morgan Collection and on view in the Metropolitan Museum of New York, are typical of the last important phase of related mural decoration and describe that return to nature, so called, which characterized the final efflorescence of French decorative art before the Revolution.

It is not illogical to consider Bérain as the first real originator of a special form of wall decoration, that of rooms painted in a spirited yet thoroughly conventionalized manner, introducing free and fanciful subjects surrounded and restrained by confining arabesques. His creations were not, as in the case of the Dutch and Italian artists and of some of the later French masters, a series of framed and related pictures occupying all the available surfaces of a room; they consisted in a series of light compositions painted on the walls, the latter being still visible. In a word, he ornamented the walls, and did not turn them into pictures. This manner was called at the time "la décoration claire," and the three first plates accompanying this article clearly illustrate how Bérain handled the type in question.

Jean Bérain, "dessinateur de la Chambre et du Cabinet du Roi," was born at Saint-Mihiel in 1638, and enjoyed throughout his entire career the greatest possible vogue. Nothing seemed to be done that was not either after his manner or else directly taken from his own designs, of which he published an enormous number. His ornamentation serves as a type of Louis XIV decoration, for Bérain lived and worked through practically the entire reign of that monarch, at least so far as its fixed artistic style is concerned, and his activities continued almost up to the day of his death. His earliest work bears the date of 1663; he died in Paris on December 18, 1711. Like all other masters of decoration of his time, and those of the succeeding reigns, his designs were extremely varied in character. They did not consist merely in deco-

rative suggestions for flat surfaces, but included drawings for furniture, bronzes, carriages, gardens, and all the minor related objects to these things. He had a particular fondness for fanciful subjects. Within his arabesques, among the sprays of foliage and conventionalized vegetation, we see curious birds and beasts, figures in contemporary dress, Chinamen in brilliant costumes.

Slender sphinxes and caryatides play their constructive part among allegories and mythologies. Portraits appear in central medallions, birds and monkeys disport themselves, flying past, and clinging to the graceful tendrils of exotic plants.

In description these compositions would seem precisely to correspond with those of a later time, but it must be remembered that though the subjects are analogous the manner is totally different. With all his fancy there is something serious in Bérain. His hand has lightened the precision of his forerunners of the Renaissance, but it remained for his eighteenth-century successors to transform this light precision into an airy freedom of composition.

If one were to describe the designs due to the brush of Jean Pillement, who was born nine years after the death of Jean Bérain, and who lived until the year 1808, the elements forming the subjects of his compositions would appear to be but a repetition of those used by the earlier master. Yet nothing could be more different, though necessarily the idea is the same.

Pillement was thoroughly and absolutely Louis XV, just as Bérain was typically Louis XIV, and the comparison of the two is most illuminating and amusing. The latter, as we have seen, spent his entire career in Paris, whereas the former worked not only in that capital but passed a great deal of his time in London. He died in Lyons in the Napoleonic epoch and, though he had lived throughout the whole reign of the sixteenth Louis, his manner up to the very

last continued to be that of Louis XV. His brushwork was broad and free; his composition ignored that obvious balance which seemed indispensable to the taste of his predecessors; his touch was airy and spontaneous. He was officially described as an "engraver and painter of flowers," and had been given the title of "First Painter to the King of Poland." He published numerous volumes containing suggestions and models for mural decoration, one of which, published in London in 1755, was entitled "A New Book of Chinese Ornaments." His predilection for the exotic is seen in the names of many of his collected creations, and the titles themselves evoke fascinating pictures of would-be Oriental imagery. "Fleurs persanes," "Cahier d'oiseaux chinois," as well as "Balançoires chinoises" and "Parasols d'Orient" are combined with what the artist himself called "fleurs singulières, mélangés de paysages et motifs fantaisistes, de rinceaux de rocaïlle et de plantes étranges."

Christophe Huet with his brother Nicolas were contemporaries of Pillement. Their style was more conservative than the latter's, and in their touch something of the Regency and of Watteau persisted. Their work, less original and facile, more highly finished and important, has remained to us in its most brilliant phase on the celebrated walls of drawing-rooms within the Hôtel de Rohan and the château of Chantilly (Plate VII). Of the two, Christophe was undoubtedly superior in talent as well as in popularity, though Nicolas has left us many charming examples of his art, of which Plate VIII is a good specimen.



III. Bérain. Painted panel (1674).

When Madame de Pompadour leased the Château de Champs from the Duc de la Vallière she, notwithstanding that her occupancy of the house was but temporary, spent there more than two hundred thousand French pounds on alterations, improvements, and decoration. Among the painters commissioned to beautify the rooms were both Pillement and Huet, who worked in collaboration, covering the walls with graceful imagery. These paintings survived the ravages of the Revolution, and the small sitting-room decorated by both of these artists serves as an excellent example of mid-eighteenth-century light decoration. It has an airy and pleasing character, and one can imagine nothing but the brightest and gayest of conversations taking place therein.

Plates IV and V are descriptive of Pillement's Chinese manner. They exemplify his lightness of handling and his independent though balanced treatment of line. It is unfortunately impossible for a photograph to do justice to this artist's broad and spontaneous brushwork as well as to the extraordinary charm of his coloring. In a composition such as that shown in Plate VI, we have but a suggestion of what is his most typical manner. He painted very often in off tones of blue and green, illuminated here and there with brilliant touches of color. I do not believe that any of his paintings exist in America save those, similar in composition to the last-mentioned illustration, forming the walls of a very remarkable room in the Washington residence of Mr. Perry Belmont.



V. Pillement. Engraved design for a panel in the Chinese taste (1755).



VI. Pillement. Painted panel (1750-60).



IV. Pillement. Engraved design for a panel in the Chinese taste (1755).



VII. Christophe Huet. Painted panel. Chinese scene framed in arabesques (1745)



VIII. Jean-Baptiste Huet. Painted panel (1760).



X. Painted panel. Pompeian style typical of late Louis XVI manner (1788).

Although Pillement's style was distinctly personal, though his compositions would seem, and indeed were, wholly dissimilar to the ordered fancy which regulated Bérain's inventions, yet the latter's formula had never disappeared. Gillot, Cuviller, the Huets, and numerous others employed it. With the advent of Louis XVI we see its characteristics more definitely renewed. All styles which have their genesis

in tradition are essentially constituted, not by absolute innovation, but by modification typical of the existing order of things. With Salembier, Rousseau de la Rottière, and Jean-Démosthène Dugourc, we see at once the continuation, in transposition, of Bérain's method. We find the same arabesques, affined and less positive, framing the usual accessories; medallions, chimeras, terminal figures, fanciful



IX. Detail of a painted panel from the dress of Marie Antoinette's Turkish boudoir in the palace of Versailles. Medallions painted in Grisaille, surrounded by arabesques

birds, beasts, masks, incense-burners, and figures in exotic or contemporary dress.

Plate IX shows us three small panels at present in the Museum of Decorative Arts in Paris. They were formerly at Versailles in the Turkish Boudoir of Marie Antoinette. No better illustrations could be found to exemplify the early Louis-Seize manner. There is a grace, a lightness of touch, which is full of movement and charm. We are still far from that immobility which obtained in the latter years of the reign. These decorations also possess an amusing quality which shows us that the "esprit" of the preceding period had not been forgotten, even though classicism had begun to encroach on its exuberance. Similar designs may be found in the charming interiors composed by Moreau le Jeune, Eisen, and Saint Aubin as a background to their compositions. They belong to the best moment of the epoch, and are a happy combination of fanciful elements with classical arabesques. A slightly later style is that of the paintings which decorate the famous round salon of the château of Bagatelle. These are attributed to Dugourc and they rep-

resent the most successful moments of the pseudoclassic reaction. Other panels belonging to the same years are preserved in London in the South Kensington Museum. They are the work of Rousseau de la Rottière, who was responsible as well for the marvellous bedchamber of Marie Antoinette in the palace of Compiègne. These two rooms, with their decorations, have been minutely and brilliantly described by Lady Dilke in her monumental work on French art of the time.

The last phase of this particular art, before its colorless revival under Napoleon, we have exemplified in Plate X. Here we see the final echo of Bérain's creations imbued with the spirit of Pompeii and Piranesi. Yet all one has to do is to glance at the first of our series of illustrations to see how the tradition has persisted, how logical and faithful is its continuation. We are also inclined to believe that this formula still has possibilities, and that it would make an interesting vehicle for the furthering of modern domestic interior decoration.

Construction of the Small House

By *H. Vandervoort Walsh*

Instructor, Architectural School, Columbia University

ARTICLE XXII

BUILDING THE SETTING FOR THE HOUSE

THEORETICAL FEATURES OF GROUND ARRANGEMENT

THERE are five fundamentals which should be considered in finishing the grounds about the small house, for it must not be forgotten that the finest gem of domestic design will be lost unless it is placed in the right setting. These five principles are the production of an intimate relation between house and grounds, the formation of a natural frame about the house, the building of interesting approaches, the planting for seasonal effects, and the growing of interesting and beautiful vistas as viewed from the house.

1.—*Intimate Relation Between House and Grounds*

In considering this part of the problem, the designer must begin at the very outset to solve it. If the plot is level or capable of easy conversion into terraces, then the character of the house itself may be somewhat formal, symmetrical, and dignified; but it would be wrong to build a house of this kind upon a rolling and rollicking site. This latter kind of ground demands the picturesque type of house, and the roof lines should be planned to carry up some of the curves of the hillocks.

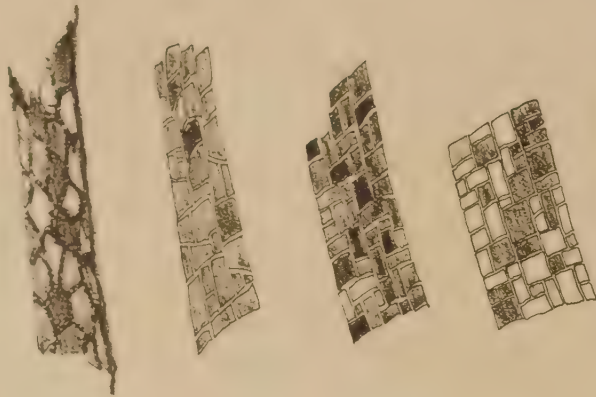
In all cases, however, it is generally recognized that the small house can best be tied into the surroundings by making it low, say, a story and a half or one story, for one of two stories or even two and a half offers an ungainly elevation for an architectural composition. In rare instances have houses of this proportion been artistically finished. At any rate, the house should be kept as low as possible in the front, and the ugly, stilted foundations should not protrude above the level of the lawn. Nothing is so effective in producing a feeling of intimacy between house and grounds as to keep the level of the first floor only about six inches above the grade. This, of course, makes it difficult to light and ventilate the

cellar, since any windows in the foundation walls would have to open into areas. A compromise can be made by grading the lawn down at the back of the house, so that enough of the foundation can extend above the ground to permit of well-lighted cellar windows.

Another method by which an intimate connection between ground and house can be produced is in the blending of wall materials and foundation stones. If the walls of the house are of stucco, and the lower part of them built of rubble-stone, then a gradual transition can be made from the stone to the stucco by carrying the stucco down over certain parts of the stone work, so that it flows into the mortar joints—like the waters of a lake flow into the little indentations of a rocky shore. This will eliminate any sharp horizontal line where the foundation wall of stone ends and upper wall of stucco begins. As the stone has a natural intimacy with the soil, it easily makes the transition with the ground, and its effectiveness is very marked where the site is hilly and parts of the foundation are built upon little rocky jutting. This same easy transition can be made from stone foundation to brick wall. It is not possible to do it with the wooden wall, however.

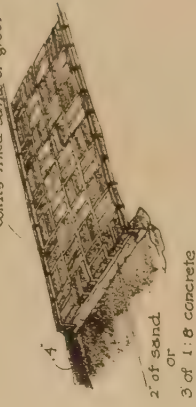
But perhaps the most widely used method of producing an intimate connection between ground and walls of the house is with foundation planting. There is much abuse of this method. To surround the base of the house with billowy clumps of shrubbery, so that it appears almost as if it were springing from a bed of clouds, is not at all satisfying. Nor should the owner have to be everlastingly kept at the job of trimming down these plants or removing dead ones which refuse to grow in the poor soil and bad drainage next to the cellar. And the house should not be made to mourn behind a bed of evergreens, protected at intervals with sen-

(Continued on page 317)



TYPES OF STONE PATHS

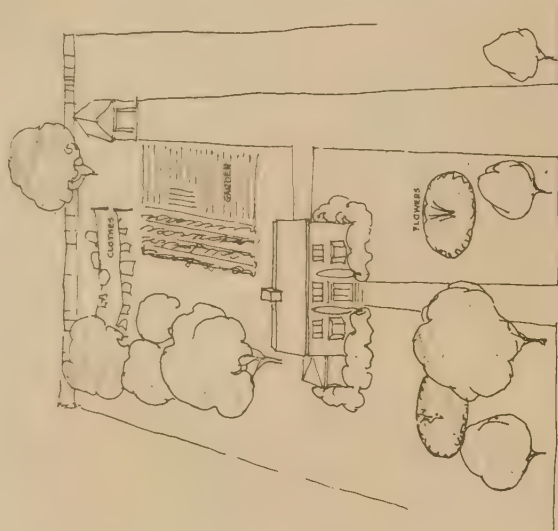
Joints filled sand or grout



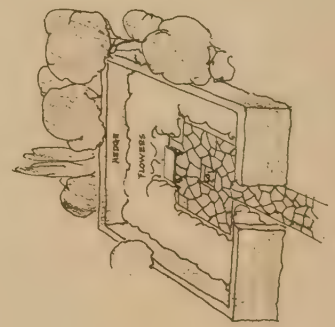
2" of sand
or
3 of 1:3 concrete



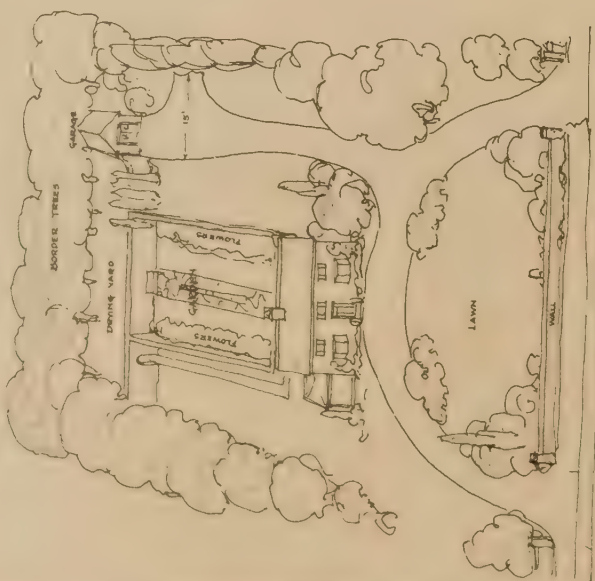
— TYPES OF BRICK WALKS —



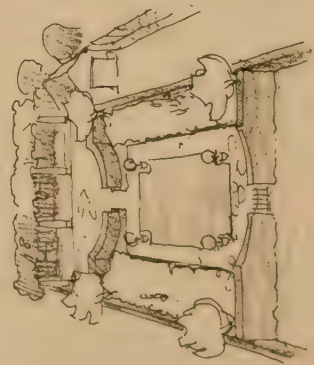
THOUGHTLESS PLANTING



TYPE OF SMALL GARDEN



STUDIED PLANTING



TYPE OF SMALL GARDEN

(Continued from page 315)

tinellike cedars, dark and forboding, against the wall and sighing and whining in the wind. Rather should a delicate use be made of foundation planting by using vines, and now and then a small shrub or little evergreen. The object should be to make a shading and transition from the green lawn to the walls of the house by carrying upward upon the walls or against them some of the climbing plants, that the green of the ground may fade gradually into the white of the stucco or the red of the brick wall. Public buildings need massive and impressive foundations, but the small house should be nestled in Nature's lap.

2.—*Natural Framing for House*

When viewed by the passer-by in the street the planting around the house should be so arranged that it makes a natural frame for it and creates a composition for a picture. Regarded from this angle there should be background trees, trees and shrubbery flanking the sides along the edge of the plot, a green open lawn stretching forward to the street, some columnar-shaped trees or lacelike trees wisely placed to suggest the middle ground, and then a wall or low hedge with low plantings to make a foreground.

The background trees should be tall and mixed in character, so that their sky-line is not stiff and wall like. The trees which run along the edge of the lot ought also to be varied in type. Low shrubs should fill in the spaces between their trunks, but as they come forward on the property they should be more scattered, lower and thinner, so that the neighboring property can be seen, and finally they should end, allowing a blended connection between the lawns on either side. There are some who advocate that the site should be completely walled in with shrubs or fences and separated entirely from the neighboring plots, but this is not quite in harmony with our traditions, and ought not to be carried to this individual exclusiveness, although the rear of the lot may be so screened in.

The green lawn should not be broken with flower-beds, for, taken at its largest, it is bound to be little, and nothing should be introduced to break it up. The windings of the front path may be such that clumps of low shrubbery and a few columnar trees, like cedars or Lombardy poplars, can be placed along its edge and produce a motif for the middle ground, like a moving silhouette against the elevation of the house as one passes by.

The building up of the foreground should be with some low planting over which one can look. The use of fence or wall is legitimate if it does not cut off the view. Gates are a little out of harmony with our American traditions, for they mean that they should be attended by a gatekeeper, a human tool that is quite extinct in the average home, and especially in the small one.

3.—*Interesting Approaches*

Generally speaking, due to the smallness of the average plot upon which the little house is erected, the building of a pathway to the front door directly in a straight line from the street, cutting the lawn and the property in two equal halves, is quite wrong. The lawn will be small enough as it is without chopping it into two pieces. Then, too, the straight approach has not the mystery and picturesque quality of one which curves around the outside of the lawn, and is framed in with planting so that the view of the house is constantly changing as one proceeds. But it is quite essential to plant shrubbery at the bends in a path of this kind, otherwise one

will instinctively resent the longer distance created by the curve and start to walk across the lawn. But by erected barriers of low plants, the mind feels that the path is following the way of least resistance, just as one follows contentedly the rambling curves of the Indian trails in the woods to avoid this fallen tree or that high rock and the like, although all of these *détours* make a longer way to the distant point ahead.

The roadway to the garage might also be the way to the house. Nothing looks uglier than the straight cut from street to garage. Planning the location of this service building so that it cannot be seen from the street is an excellent step in the right direction.

The material of which these paths and roads should be constructed ought to be in harmony with the house. Brick paths look well with brick houses, stone paths and gravel paths look well with stone houses, concrete paths and roads go well with concrete and stucco houses, for one naturally associates these materials as being left over from the building. It is the most natural thing in the world to use up a few of the bricks for the paths after one gets through building the brick house, or laying some of the stones to walk upon, after finishing the house of stone, or using up a few odd barrels of cement for the walks when the job on the concrete house is over. And being so natural a thing, there is a likable gesture in doing it.

4.—*Planting for the Seasons*

The composition of the picture, which is the aim in all of this work about the house, should not be spoiled by careless selection of plants for the various seasons of the year. It is very unwise to place in the front of the house tender shrubs and flowers which wither and die in the winter months or which have to be wrapped in swaddling-clothes. Is there anything more forlorn than to see a lot of burlap-wrapped or hay-packed mummy trees or shrubs, standing out on the cold wintry lawn in front of the house? A few evergreen-trees and a few broad-leaf trees which show delicate limbs, when bare, and a few shrubs that hold the snows that settle upon them are the things to plant in the front of the house. Leave the tender plants to the garden in the rear.

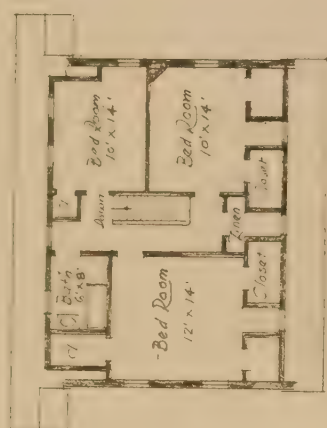
And this garden at the back of the house should be treated in the most private way. It should be surrounded with a wall or high hedge. There should be walks, border plantings, a little touch of water, and a seat in the smallest garden. It should be located so that it can be viewed from the house and enjoyed. Here all of the fine, delicate, and colorful flowers and plants can be placed. In the winter months the protected plants with their ugly clothes will not seem so out of place in this secreted patch of ground.

5.—*Improving the View from the House*

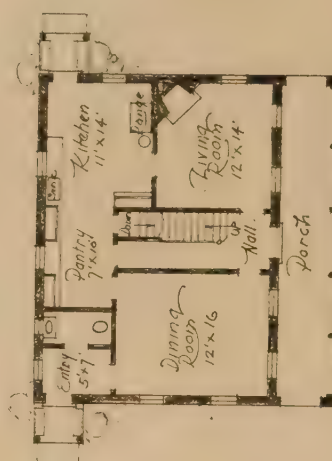
Next in importance to planning the setting of the house and its appearance from the street should be the planning of the views from windows of the house itself. The development of the private garden at the back is one help which was previously alluded to, but there are generally ugly things which can be seen from the windows of the house that need screening out. These ugly objects may be on the neighboring property, or they may be the drying-yard for the clothes, or the garage. Whatever they are, a screen of trees can be used to shut them from the view.

But the most important part of this problem is to make the best of any view that may be possible from the house.

(Continued on page 320)



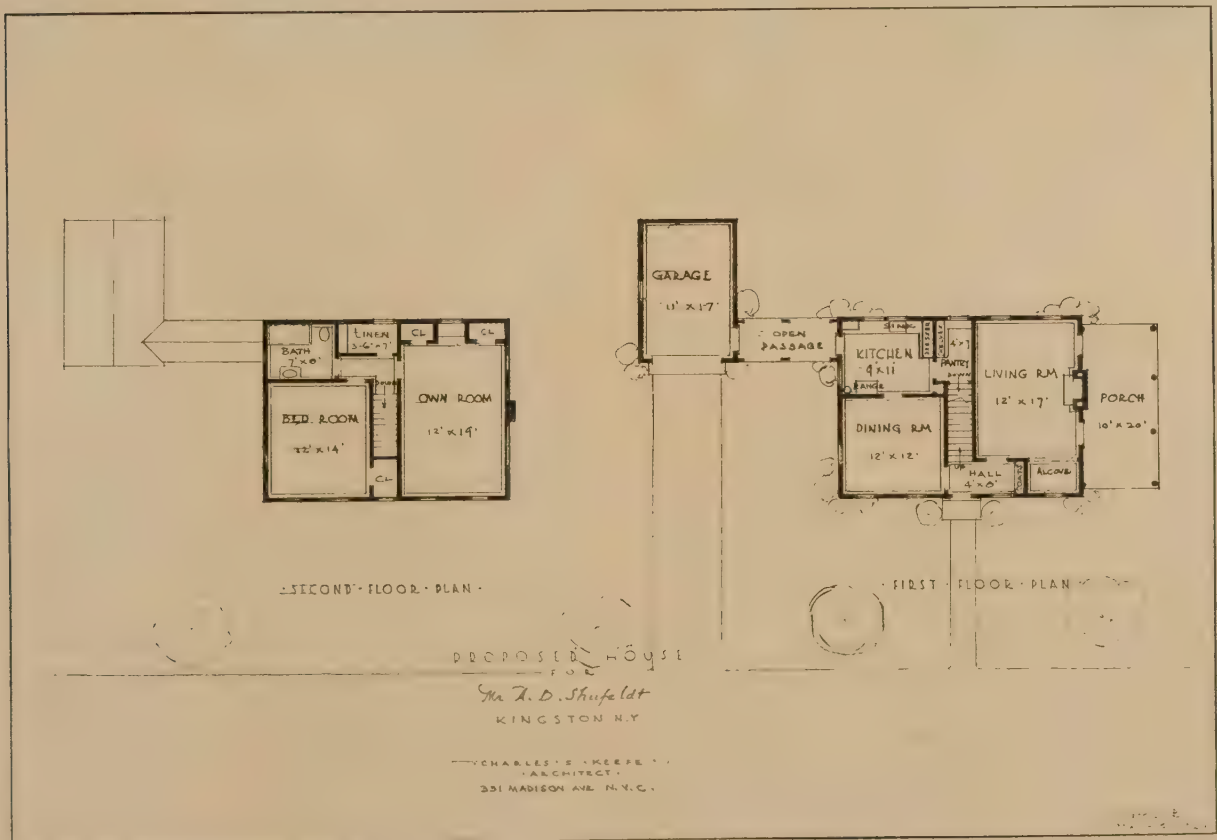
Second Floor Plan



First Floor Plan



FARM COTTAGE AT MADISON, N. Y.
EDWARD EURNETT
ARCHITECTS



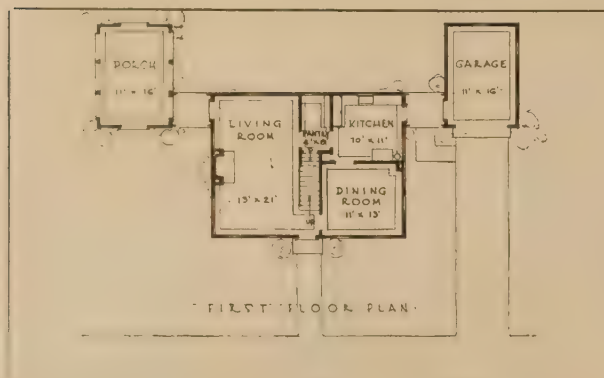
HOUSE, A. D. SHUFELDT, KINGSTON, N. Y.

Charles S. Keefe, Architect.

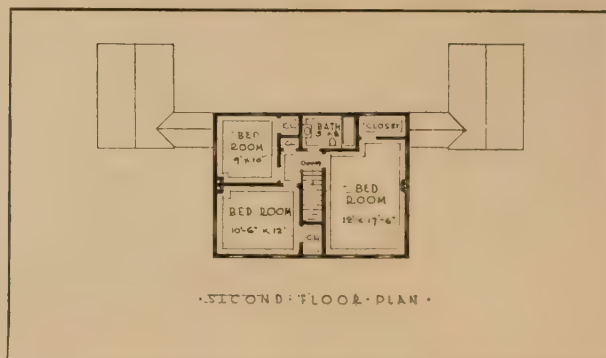


PROPOSED RESIDENCE FOR
E. S. Goodliffe Esq.
 AT BRYN MAR, N. Y.
Charles S. Keefe.
 ARCHITECT.
 331 Madison Ave. N. Y. C.

April 18, 1921.



House, E. S. Goodliffe, Bryn Mar, N. Y.



Charles S. Keefe, Architect.

(Continued from page 317)

A far-away river, a hill, or a meadow might be brought to sight by trimming some trees or brush. Distant landscapes are most satisfying to the eyes, for they rest them.

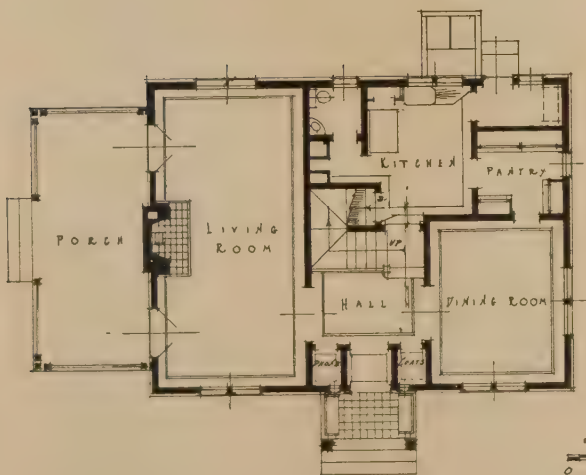
CONSTRUCTION OF THE LAWN

From what has been said, the importance of the lawn in front of the house can be appreciated. It is the rug spread out before the jewel-box. Over it one can view the beauty of the home, and so it needs the best attention. The very first thing to consider in building the lawn is to arrange for good drainage. Pockets where water may collect and settle must be drained with tiles placed in the ground. The surface water should be carefully distributed away from the house.

An ordinary site will have stones and weeds scattered over it. In the beginning these stones should be carted away and the weeds cut down with a scythe, and a plough run over the surface to a foot in depth, unless the subsoil is not sandy and holds water, in which case a deeper ploughing is better. Then stones and weeds should be taken out of this earth, not once, but as many times as the earth delivers up stones and weeds. When this is done, the grading may be started, and this should be with long, easy grades. Where trees and shrubs edge the lawn, a slight hollow in the grade will improve it.

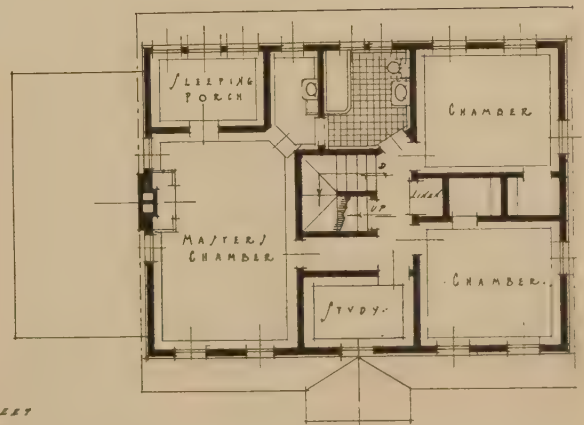
This graded soil is not ready for grass until it has been covered with 25 to 50 loads per acre of thoroughly decayed, composted stable manure, or if not this, bone-dust, wood-

(Continued on page 322)



• FIRST FLOOR PLAN •

SCALE OF FEET
0 5 10 15



• SECOND FLOOR PLAN •

RESIDENCE, PROFESSOR D. C. MACINTOSH, NEW HAVEN, CONN.

J. Frederick Kelly, Architect.

(Continued from page 320)

ashes, superphosphates of lime, nitrate of ammonia, etc. This dressing should be raked into the top-soil with the harrow and hand rake, and whatever weeds and stones come up with this operation should be removed.

Grass seed should then be selected which will give the most rugged growth for the particular conditions of the site. Often this can best be accomplished by using a mixture of seed. The different kinds of grass have qualities suited to certain types of soil. For example, Kentucky blue-grass, while coarse and not so attractive as some others, grows vigorously and holds its own in sandy soil. Rhode Island bent-grass makes good sod in moist climates, and redtop is apt to die off in a drought.

This seed must be sown liberally to make allowances for loss in germination, and evenly to prevent patchy growth. About six bushels per acre is considered enough. All of this must be raked under with a fine-toothed iron rake and pressed down with a heavy roller. As soon as the blades are tall enough to be caught in the mower, this new grass should be cut, for this helps to make it grow thicker and keep down the weeds. But work on the lawn does not end here. Constant care is the price of a good one.

CONSTRUCTION OF ROADS AND PATHS

Attention has already been called to the use of materials for paths and roads which harmonize with the materials of the house. In a previous discussion, details were given on the construction of concrete paths and roads. Therefore other types will be considered here, such as brick, gravel, and stone.

The driveway to the garage ought to be about 10 feet wide and flare out to a 15-foot width at the house where the car is driven up to the entrance, so that an incoming car can pass by any which is standing in front of the door. This roadway should widen out into a Y shape in front of the garage, as shown in the drawings, to permit of backing out and turning around. A round turning area in front of the garage may be substituted for this Y-shaped arrangement. Any curves made in the driveway should have a radius from centre of the curve to outside edge of the road of 30 feet 6 inches, although a Ford car can run on a road having a radius of only 14 feet.

If the driveway is to be of gravel and the subsoil is wet or clayey, drainage must be arranged for along the edges. Trenches 3 feet to 4 feet deep should be dug on either side and 3-inch diameter agricultural tile laid at the bottom with open joints covered with collars, then a layer of sod, and then 6 inches of field stone or gravel, and finally top-soil.

Wherever there are pockets that would collect surface water, outlets should be constructed, and covered with iron grating. All the subsoil tile should connect with one main tile and drain off at some low point.

For ordinary light traffic the road itself may be built with a foundation of stones to a depth of 2 feet. This should be covered with a layer of coarse gravel $2\frac{1}{2}$ inches thick, a top layer of finer gravel 4 inches thick, and rolled with a heavy roller after water or some bituminous binder has been sprinkled over it. A crown of $\frac{1}{2}$ inch to the foot should be made, and any grades ought to be kept about 5 feet in 100 feet, and at the most 10 feet in 100 feet.

In the construction of gravel walks, the grade should be kept to within 12 feet in 100 feet and be crowned $\frac{1}{4}$ inch per foot.

The success of the brick walk depends upon the foundation used. A poor one will permit the bricks to settle unevenly, crack, and break away at the edges. The bricks themselves may be laid in any number of different and interesting patterns, such as the basket weave or the herringbone. A row of bricks on edge along the outside of the walk makes an excellent finish.

The foundations of the brick walk may be built of sand, cinders, or concrete. The first two give a walk somewhat irregular, and grass can be made to grow in the joints. To begin the laying of a brick walk, the earth should be excavated to a depth of 4 inches, and either a bed of sand 2 inches thick or a concrete of one part cement to eight parts sand 3 inches thick should be spread. When the bricks have been arranged on this bed, sand should be worked into the joints between them by leaving a layer on the walk for a few days and brushing it into the crevices.

Where concrete is used for the base, a more rigid walk will result, and in such types it is customary to use mortar to fill the joints. A thin 1:3 grout can be brushed into these joints and the little that is smeared over the surface can be washed off with scrubbing-brush, water, and 5-per-cent muriatic acid. A better method is to pour grout into the joints, wiping the brick clean before the mortar sets.

There are a number of different types of stone walks that can be used, depending upon the character of the stone in the neighborhood. Flat flagstone walks are usually rather uninteresting and many prefer the picturesque effect which is produced by stepping stones. These ought to be placed about 22 inches apart to make walking easy on them. A very interesting and much-used walk is made by setting flat stones of different shapes together, like the pieces of a cut-out puzzle, but leaving a small space between each stone in which grass or moss can be grown.

Announcements

Frank J. Ricker, architect, now occupies his new office at 612 Bergenline Avenue, West New York, N. J. Catalogues desired.

C. Kenneth Bell, architect, is now located at 2316 Dime Bank Building, Detroit. John Scott, consulting architect.

John Scott & Company, architects, have removed their offices from No. 2326 to 2316 Dime Bank Building, Detroit. C. Kenneth Bell, formerly connected with the firm, will continue as associate architect.

Norman Hatton, 321-2 O. R. C. Bldg., Cedar Rapids, Iowa, begs to announce that the partnership formerly known

as Hatton, Holmes & Anthony has been dissolved by mutual agreement. He wishes to thank all clients for past patronage and hopes to be favored with their future commissions. He will continue the practice of engineering and architecture in the same location.

Every architect will want to have for his reference files the Batchelder Tiles Catalogue of Mantel Designs. These beautiful tiles have made a distinct reputation for themselves and incidentally, of course, they contribute another factor to California's fame as a home of the arts and crafts. The address of the Batchelder-Wilson Company is 2633 Artesian Street, Los Angeles.

A Modern Business Building

Samuel A. Hertz, Architect

THIS building is erected on an interior lot 20 feet wide. The lower portion of front is of granite terra-cotta and the upper portion of limestone terra-cotta.

The natural-light problem was solved by an interior court 4 feet wide at the rear of the building for lighting



Terra-cotta cap.

cellar and first floor. Natural light is acquired from both sides by installing lot-line fireproof windows and from the top by studio windows.

The second means of exit is a fire passage hung from second-floor ceiling beams.



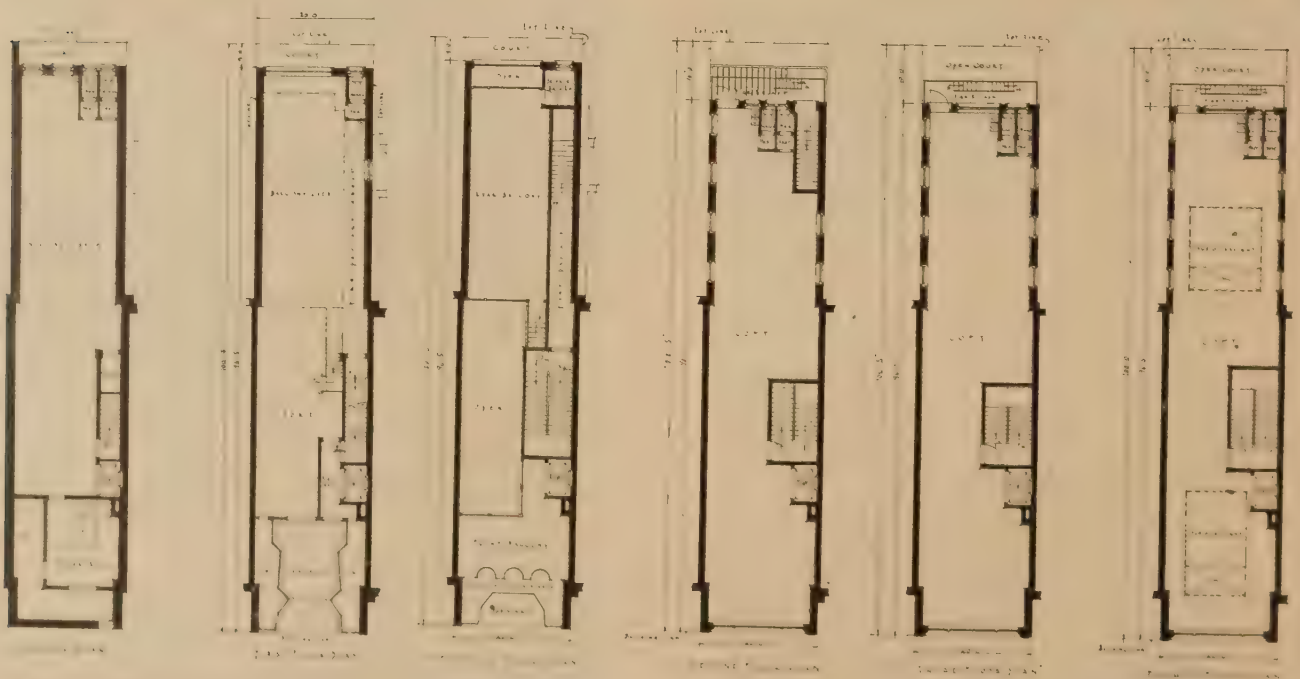
Old building, 151 West 45th Street, New York.



New business building, 151 West 45th Street, New York.



STORE, FIRST FLOOR.



PLANS, NEW BUSINESS BUILDING, 131 WEST 45TH STREET, NEW YORK.

Samuel A. Hertz, Architect.

Integral Waterproofing: A Practical Discussion

By Samuel R. T. Very, Architect

A PERTINENT and impertinent deal has been written, said, and thought upon the subject of this article, which has to do with the use of integral waterproofing compounds in portland-cement plasters, mortars, and concrete masonry as used in architecture. The exposition by zealous waterproofing-compound manufacturers of the merits of their products and the dissension by earnest portland-cement manufacturers have been so convincing that no bewildered architect who has followed the controversy can fail to appreciate the humbuggery of some of the opposing views, whichever side they state. Scientific writers on the subject have not shed much light upon the facts; as a rule they are hopelessly cautious, or their observations are so elaborate, or meticulous, or involved with other research as to discount their authority; and sometimes they, too, are fiercely partisan. But all of the wrangling gentlemen are in truth engaged in a controversy which has little to do with the point; and it is the intention of this brief to illuminate this point and settle the controversy. Waterproofing compounds are exactly what both sides claim they are: unnecessary when ideal and perfect mixtures, conditions, and labor are employed, but necessary at all other times (which is nearly always). It is a fact that the personal equation of workmen is the principal field condition which prevents ordinary portland-cement concrete, properly mixed, and ordinary stuccos from being as waterproof without a good compound as with it.

Identical claims of both sides have been proven and disproven by laboratory tests, which, however, are usually open to serious faults. Like Darwin's remarkable study of pigeons, observation of more specimens than can be available to any one laboratory worker would be necessary to draw an infallible conclusion. The overrefinement of laboratory specimens of untreated concrete sometimes has shown them up the equal of the "waterproofed" specimens; it is astonishing that the keen observers employed by certain representative cement companies and by the United States Bureau of Standards do not appreciate the importance of that fact. There is also an utter difference between laboratory-test conditions and field, or job, conditions. Tests upon specimens mixed in the laboratory do not determine the practical efficiency of waterproofing compounds to be used in the field, where the personal equation of workmen is so variable. This last is the cause of the practical impossibility of untreated portland-cement concrete being uniformly, homogeneously waterproof. It is a matter of such universal knowledge that it seems silly to take space to say it, but in view of the misleading findings from trained, conscientious, and truthful laboratory workers, it should be noted here that when concrete foundations leak, it is rarely a homogeneous leak—a veritable sponge that appears; some spots are dry; some portions are better than the rest. A whole lot of well-made laboratory specimens may be good, bad, or indifferent without proving a criterion for the field. The laboratory worker with his profound erudition in explaining the humbuggery of his opponent's views (whatever they are), with his integrity of effort to purge the gullible world of fraud, goes conscientiously to work mixing his little pats just so, eliminating the tiniest exotic. He sets his hair-weight scales and blows from the heavier pan with an air-

washed blast the speck of dust just landed, and smiles exultant in having thus saved to the world a true and "typical" specimen. This specimen, remember, is about to be compared to the average work of those great thumb-fingered, gawky, red-necked foreigners at the mixing-box, measuring their masses with dented buckets, and barrels sometimes stove in and patched; measuring what? The nice, pure, uniform, round white globules of Ottawa laboratory-testing sand, and some brand-new portland cement, selected for its test-safety? Oh, no! They measure what the boss has got to buy for the least outlay the specifications will allow (and sometimes less than that). And they are not very fussy, either, to fleck away the speck of dust. They slap the stones and sand and cement together in a mixer, pour in the water, and it comes out mud, and they treat it so. And then those unsentimental fellows with tremendous shoes tamp down the mass in the trenches (if the red-necked boss is looking), and call for their pay on the stroke of twelve next Saturday.

In the year 1915 the United States Bureau of Standards made two large-sized integrally waterproofed stucco panels for field-tests. The panels are described in Technological Papers No. 70, printed in 1917; but no published report has yet been made concerning the efficacy of the integral compounds used; nor would it be possible to make any conclusive decision as to the efficacy of the compounds from a study of these two panels alone.

The writer is an architect; therefore presumably temperamental, and with the poetry of his profession surging through his veins; an example of what some one has called the short-haired variety of artist. But notwithstanding that handicap, before waterproofing compounds were the subject of controversy, he was convinced of the importance of properly mixing cement for any operation, whether in concrete, or stucco, or in ordinary masonry mortar. He is still convinced that it is the exception in structural work that efficient mixing and placing are done, but those faults are common to mixes treated and untreated with waterproofing compounds. While the study of such faults is valuable, it is out of place in this paper except in so far as the use of waterproofing compounds tends to decrease the dangers from faulty manipulation in form or surface usage. It is the writer's conviction, after a rather careful study of the subject for ten or twelve years, that at present owners are too indifferent or unaware of the importance of the subject, and that contractors are too obsessed with their mastery of the practical manipulation of cement, to properly weigh the merits of the biased opposing claims concerning waterproofing.

It is absurd, of course, to expect even a good waterproofing compound to cure bad masonry. Unfortunately, the earlier tests made by the United States Bureau of Standards (not those above referred to) were upon mixtures so ridiculously lean that they would never be used in good stucco practice, as lean as 1 part of cement to 8 parts of sand. No waterproofing compound ever devised could work best under such conditions; yet these tests were summarized by substantially this conclusion: "Portland-cement mortar and concrete can be made practically water-tight or impermeable to any hydrostatic head up to 40 feet without

the use of any of the so-called integral waterproofing materials." But the only method suggested, nevertheless, is a rich mixture and especial care in the field manipulation. That is almost the equivalent of saying you won't get drunk if you don't drink. Everybody admits that a combination waterproof to all practical purposes can be obtained by perfect grading, thorough mixing, and ideal placing and tamping of concrete mixtures, even without the use of any waterproofing compound; but the Bureau of Standards overlook the important fact that this necessitates everlasting vigilance, costly labor, and excessively expensive supervision, which it is partly the attempt of integral waterproofing compounds to avoid. Indeed, the value of these United States Bureau of Standards experiments reported in 1911 may be doubted altogether, so far as they concern waterproofing compounds, for the following reasons: Their observations indicate that "any mortar richer than a 1 to 4 proportion was impervious in itself under a hydrostatic pressure of 20 pounds to the square inch." Yet it is a matter of common observation and grave architectural concern that stuccos richer than that are sometimes veritable sieves unwaterproofed. Arrayed against their evidence, the proceedings of the American Concrete Institute, in a report of the same year (1911) on the treatment of concrete surfaces, may be quoted: "The integral method of waterproofing by means of a powder, paste, or liquid added to the mass of the concrete . . . is probably the most logical . . . some of these materials have considerable virtue. . . ." It is true, however, that that institute has never unqualifiedly indorsed their usage. A number of years ago they published the following: "Practice varies widely in the mixture and application of stuccos. The use of . . . waterproofing materials will stand further investigation." That still appears to be the opinion of most of their members interested in the subject. A great deal of harm has been done to the justice of this subject by misleading wide-spread advertisements of some of the manufacturers of cement, who quoted the United States report above mentioned in the parts unfavorable to waterproofing; and waterproofing-compound manufacturers, very unfortunately for all, used to employ, almost universally, salesmen and architects' representatives who seemed disposed to believe their products cure-alls for cement-masonry ills. Even reputable manufacturers disseminated literature of a decidedly misleading character. One, especially zealous, claimed for his very good compound that its use "involved no extra labor expense," and that it made concrete and cement "absolutely water-tight, even under the most extreme water-pressure," both statements technically accurate if qualified, but unqualified being susceptible of a misleading interpretation.

The combination of these distracting circumstances, at first, when waterproofing compounds made their appearance, quite confused the average architect, who thought he had been born with a little common sense, but who hesitated to admit it in the face of contradictory evidence from such authoritative sources. Certainly, he could not decide alone the virtues of the opposing claims. In consequence, the writer being one of them, after reading as much of the subject as his professional leisure permitted (which was a good deal), and after discussions of the waterproofing qualities of particular compounds with fellow practitioners, none of whom seemed to know certainly about the truth, and most of whom knew nothing whatever, decided to figuratively roll up his own forensic sleeves, and debate the issue with every manufacturer of cements and cement waterproofing compounds in the world; and he ended by actually rolling up his linen sleeves, and mixing and testing a large

number of specimens of portland and natural cements, some treated and others untreated with various alleged waterproofing compounds.

These tests were then, and still are, so far as the writer is aware, unique in these respects. They were not made with any greater care than would obtain in the field "on the job." They were not conducted for scientific results, but to obtain, as nearly as possible, job conditions and comparisons. No manufacturer was present at the mixing.

No concrete was tested, because stuccos were far simpler to manipulate, and they were quite as satisfactory for the purposes intended: to find out whether cement mixtures are made more nearly waterproof through the use of integral waterproofing compounds.

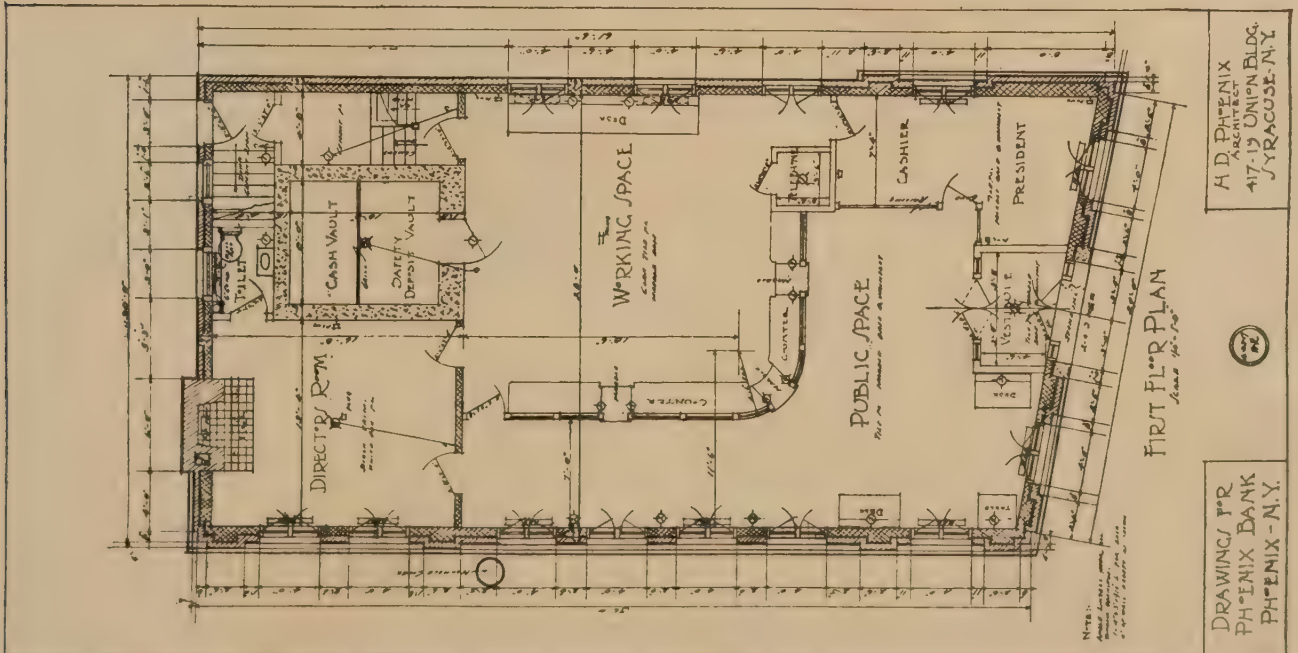
The results of these tests prove the writer's acumen prior to their undertaking, which, owing to the controversy between factions whose interests were apparently not antagonistic he was beginning to seriously doubt. He discovered the phenomenon that a waterproofing compound is a waterproofing compound. In addition, the results disclosed some very interesting facts concerning the deleterious effects some compounds have upon stucco mixtures, which, while probably waterproofed with them in the sense that their introduction under practical working conditions would make the batter less permeable, are weakened by them, and in some cases shrunk.

The courtesy shown by the manufacturers who submitted their compounds for test (there are ten times their number to-day), the assistance by cement companies in furnishing cement, and the co-operation of a manufacturer who loaned a hydrostatic machine and other paraphernalia for the test specimens, combined to furnish unusual testing advantages.

The apparatus for mixing the specimens was purposely chosen for its unlaboratory character, for its similarity in crudeness to job or field conditions. No hair-scales were used, nor superdented buckets, for that matter; average job conditions were approximated. Scales akin to those likely to be found under practical working conditions were chosen, where the variation of a hundredth part of a gramme wouldn't scare the operator a hundredth of a particle. An ordinary tumbler measured out the sand and cement and some of the compounds tested. These tests were to prove or disprove the efficacy of the use of waterproofing compounds under practical working conditions, and no care whatever was taken to see that Mr. Manufacturer A's compound would theoretically exclude one drop more moisture from a hundred square feet of stucco than Mr. Manufacturer B's, although that seems to be the gist of the squabble between some compound and cement manufacturers. Care was taken, however, to mix the great batters well, as well as they could be reasonably expected to be mixed on the job—as well as a good workman with intelligence and experience, or as well as a bad workman under the guidance of a good boss. Moreover, the directions of all of the manufacturers of the waterproofing compounds used were read with only such intelligence as the writer happened to possess, but were followed as rigidly as he could expect of a cement mason who had never used the material before.

Much larger masses of dry sand and cement were mixed in a heap, and some specimens untreated and others treated with the different compounds tested were made from the same dry batter. Minute records of every operation were kept, even to the number of trowel strokes in mixing the dry mass; the quantities of water and other ingredients used were recorded; but note, all this was incidental, as ex-

(Continued on page 328)



PHOENIX BANK, PHOENIX, N. Y.

H. D. Phoenix, Architect.

(Continued from page 326)

plained above. Now that the tests are concluded, and a number of years have elapsed during which more is known of such compounds, the records are of interest to show how silly a thing a laboratory test might be made in proving practical comparisons. For example, the specimen whose record shows most perfect laboratory proportions of ingredients proved to be more waterproof than another of identical ingredients less scientifically prepared.

Two kinds of sand were used: white Ottawa laboratory-testing sand and ordinary commercial Cow Bay sand. Right here is the place to emphasize the fact that on the job it is not common to use white Ottawa laboratory-testing sand, whose use is usual, however, for the refined tests which have proven such amazing waterproofing laboratory perfection for some unwaterproofed portland-cement concrete specimens. But if it were usual to use such sand, no workman would have taken more care in the mixing and, incidentally, no laboratory chemist less.

The cements tested were both gray and white typical commercial brands of portland cements widely used, equal to the standard specifications of the American Society for Testing Materials, and also natural American hydraulic cement, generally called Rosendale.

The integral waterproofing ingredients tested, in the opinion of the writer, were typical of the various widely used, so-called repellent, non-repellent, metallic powders, pastes, emulsions, soaps, and liquids, which one writer at that time called Unsaturated Extended and Concentrated Colloids. No mere surface coatings such as membranes or damp-proofing paints were tested. The specimens were formed and set in rings cut in 1-inch sections from a wrought-iron gas-pipe 4 inches in internal diameter, and were uniform in superficial shape and form, being thus approximately of the same mass when set, and the thickness of many stuccos. Photograph No. F 84 shows one of these empty rings.

(To be continued)

Book Reviews

THE STUDENT'S EDITION OF THE GEORGIAN PERIOD. Colonial Details of Measured Drawings. Portfolio. New edition. The U. P. C. Book Co., New York.

We need not repeat what has so often been said of the invaluable collection of Colonial details contained in the large edition of this work. It is in truth a monumental work, and in its comprehensiveness leaves little to be desired. As a reference it is needed in every architect's office, and no student who can afford this special edition will deny himself the privilege of looking over the plates. This condensed edition includes a carefully selected series of plates from the larger work, and it is sufficiently inclusive to afford many delightful and profitable hours of study.

The contents include in the 100 pages a great variety of just those details that are being studied for use in thousands of modern adaptations of the Colonial style.

The plates are well printed on a heavy coated paper, and the portfolio container is an attractive one.

DRAWING AND PAINTING SELF-TAUGHT. By ANSON K. CROSS, Instructor School of the Museum of Fine Arts, Boston; Author of "Text-Books on Art" and "The Drawing and Painting Class"; **GRADED LESSONS.** By EVELYN F. CROSS, Supervisor of Art, Stoneham, Massachusetts. Published by A. K. Cross, Winthrop, Mass.

The way to learn to draw is to draw, as any one can tell you who imagines that art is one of those things that come as a free gift, and without effort. There are no short cuts to any real achievement in art or anything else, but there are different ways of arriving at the same result.

The author of this book has succeeded in obtaining some rather surprising results from his pupils.

The following gives a summary of his particular teaching ideas:

"The first drawings are made with a special soft crayon upon a sheet of clear window-glass, a piece of white cardboard being held behind the glass so that the drawing can be seen upon the glass as readily as it would be upon the paper.

"The test is applied by removing this cardboard back and holding up the glass to see if the lines of the drawing will appear to cover the edges of the object studied.

"I was taught to trust measurements more than my eyes, and therefore I explained in my first books the best way to measure.

"Several years after these books were written my pupils proved to me that they could see more exactly than they could measure, even when they followed my directions for measuring, and then I began to forbid the pencil measurements that prevented reliance upon more truthful eyes.

"The secret of success as draftsman, sculptor, or painter lies in thinking of and representing from the start the diameter or bulk of the object and each of its parts."

A GUIDE TO ENGLISH GOTHIC ARCHITECTURE. By S. GARDNER. Illustrated with 56 Drawings in the Text and 180 Photographs. The Cambridge University Press—The Macmillan Co., New York.

This book is the outgrowth of the author's handbook, designed with special reference to schools and libraries.

It is arranged according to subjects, with the photographs following a regular chronological order. They include general exteriors, towers and spires, general interiors, doors and porches, windows, foliage, sculpture, columns and capitals, figure sculpture, sundries.

The text includes a glossary of terms in which are a number of line drawings, and Appendices dealing with Vaulting, Tracery, The Plan of a Gothic Church, Bishops, Architects, and Freemasons.

Under each illustration there is an explanatory caption.

It is a good introduction to the study of Gothic and should prove of special interest to the lay student, though the many illustrations make it also a useful reference for the architect's library.

ART IN NEW YORK. A GUIDE TO THE THINGS WORTH SEEING. FLORENCE V. LEVY, Editor. Paper covers.

There are a lot of art things in New York worth seeing, but I dare say few New Yorkers know what they are, or where they are, beyond the walls of the Metropolitan Museum of Art. This little handbook will lead you into many unfamiliar ways, and point out buildings and sculpture of artistic and historic interest, statues, fountains, and other monuments, mural decorations, art museums, societies, clubs, exhibitions, art schools, art dealers, studio centres, and with the map and traffic guide you can always find how to get to places, and even learn "where you are at" when you travel in the subway.

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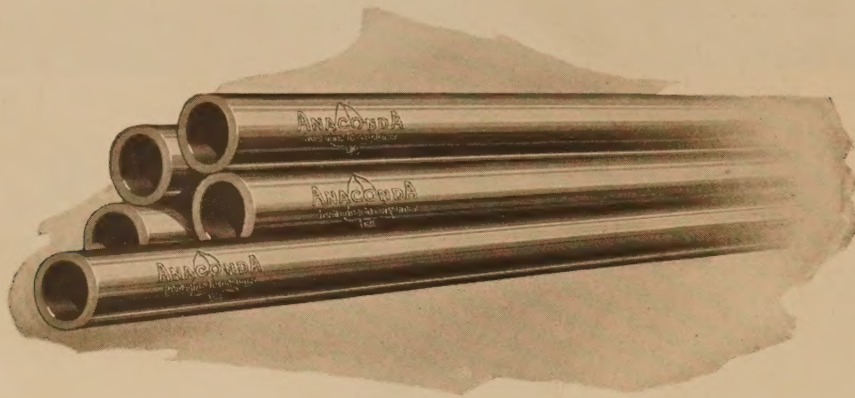
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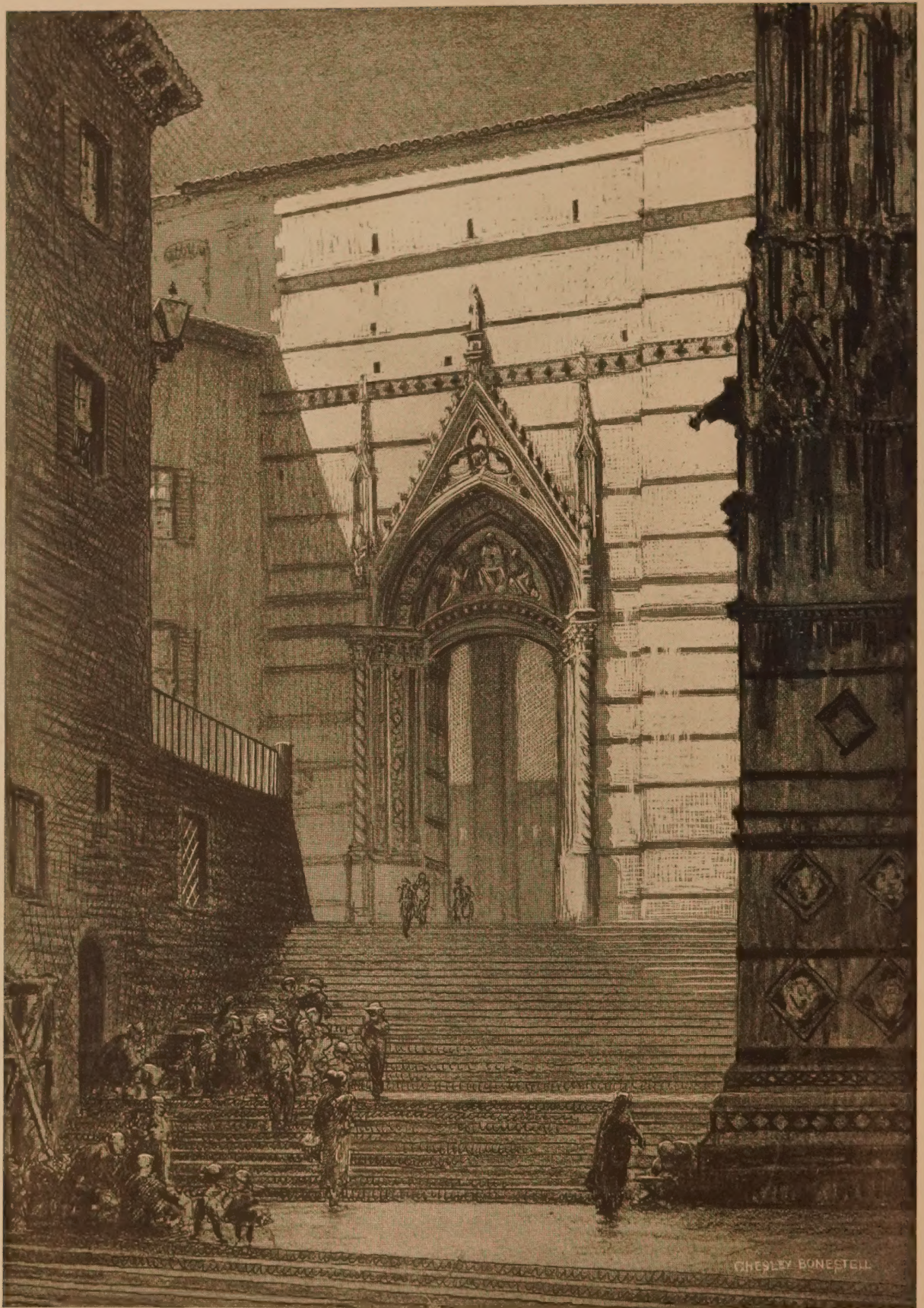
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SIENNA. In 1339 it was resolved to erect a huge nave of which the present Cathedral of Siena was to be the transept only. The project was abandoned because of the plague in 1348. The drawing shows the side entrance to the uncompleted nave, and the flight of steps leading down to the Chapel of San Giovanni.

From the drawing by Chesley Bonestell.